TOOL SELECTION GUIDE:
A REVIEW OF PERMITTING OPTIONS FOR IMPLEMENTING AREA SOURCE RULES

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Prepared for:
U.S. EPA's National Center for Environmental Innovation

Prepared by:
Industrial Economics, Incorporated
2067 Massachusetts Avenue
Cambridge, MA 02140
617/354-0074

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INTRODUCTION

EPA's area source rules limit toxic air emissions from certain sectors that contribute to health threats in urban areas. The area source categories include some groups of facilities, such as auto body shops, boilers, dry cleaners, and gas stations, which are characterized by large numbers of small entities. States and EPA regions charged with implementing the area source rules need to find approaches to ensure compliance with the federal air toxics standards that are effective, efficient, and practical.

This guide focuses on four options for implementing area source rules: general permits, permits-by-rule, the Environmental Results Program (ERP), and hybrid approaches. General permits and permits-by-rule are very popular: more than 30 state and local permitting authorities have developed general air permits or permits-by-rule for some source types.[1] These permitting tools are intended to provide an efficient, consistent way of addressing emissions from large numbers of relatively similar, low-risk facilities. ERP is an innovative compliance monitoring and assistance approach intended to improve facilities' management practices within small business sectors. To date, 19 states have developed or are implementing at least one ERP to address environmental issues in one of 24 sectors; seven of these states have applied ERP in the auto body sector.[2] Hybrid approaches involve combining components of the three basic approaches (general permits, permits-by-rule, and ERPs).

This guide describes how these tools have been applied to two sectors covered by the area source rules: auto body shops and institutional/commercial/industrial boilers. The paper explores the advantages and disadvantages of each approach, and how they may be combined to meet the specific needs of permitting authorities in different states and regions.

SUMMARY OF PERMITTING/COMPLIANCE MONITORING APPROACHES

The four tools explored in this guide are summarized below: general permits, permits-by-rule, ERP, and hybrid approaches.

GENERAL PERMITS

General permits are applicable to a class or category of facilities with generally similar characteristics. The state develops permit conditions that apply to all facilities within the regulated sector. The state then proposes a draft permit, which is submitted for public comment. Once the permit has been finalized, individual facilities apply to be covered under the general permit by demonstrating compliance with the permit terms. General permits commonly require facilities to submit an application, which includes evidence of their eligibility for the permit. The extent of information required varies. For example, Michigan's general air permit program, which covers the installation of new sources in several sectors, requires that facilities certify that they meet certain emission limits, material limits, process/operational

[1] Air Permit Program Implementation: A Roadmap for Innovation Final Briefing Paper, Prepared for EPA OPEI/OPAR/OAQPS Partners, April 17, 2006.
[2] ERP States Consortium. "ERP Sectors". http://www.erpstates.org/ERPsectors.aspx.

limits, equipment and testing requirements, and proof of monitoring and recordkeeping.[3] On the other hand, Ohio's permit for wastewater and stormwater discharges has a simple, one-page paper application form that must be sent in, but requires no effluent information from the applicant.[4] The application process also varies across states; usually there is an on-line or paper application form that is submitted to the agency. The agency reviews that form, and if the application shows that the facility is in fact eligible for the general permit, the agency sends the general permit back to the facility. No site-specific review for each facility is required, and the general permit typically only undergoes a single public comment process at the time that the state-wide permit is established or renewed.

PERMITS BY RULE

Permits-by-rule are quite similar to general permits, in that they are generally intended to cover multiple, similar, small sources of emissions. The requirements for an area source operating under a permit-by-rule are written into state regulations. A source must determine if it meets the criteria for operating under a permit-by-rule and then operate in compliance with the requirements. In some cases, facilities are required to keep documentation demonstrating compliance (e.g., monitoring records) on site.

States vary with regard to their requirements for facilities to submit information to the state concerning their coverage under a permit-by-rule. In some cases facilities are required to notify or register with the agency responsible for implementing that regulation, and certify that they are in compliance with applicable requirements. In general, this notification serves as the permit (i.e., a separate permit is not sent to the facility). In other cases, permits-by-rule do not require notification. In these cases, facilities are not required to register for the permit or inform the state that they are subject to permit requirements. Regardless of the registration or notification requirements, all facilities subject to a permit-by-rule are required to operate in compliance with the terms of the permit-by-rule. Note that some programs require a review and authorization of the registration before the facility can operate, while others do not require approval before the source begins operating or installs equipment. In cases where authorization is required, the permit-by-rule application process is equivalent to a general permit application process.

The definitions of general permits and permits-by-rule tend to vary by permitting authority, and the distinction between the two is often blurred. Moreover, these two permitting approaches are related to other permitting approaches such as standard permits and registration permits. Broadly speaking, all of these permitting approaches are designed to be more standardized, less flexible, and easier to implement than traditional site-specific permits because they require less information from individual entities applying for a permit or registration, and because the public comment process is streamlined. In contrast, site-specific permits are customized documents that require extensive and important documentation of facility equipment, emissions, and emissions controls. Site specific permit applications must be carefully reviewed by state permit writers, and are usually subject to a public review and comment process for each site-specific permit which can be time and/or resource intensive. However, site-specific permits ensure accurate and complete documentation of compliance and provide valuable information about the facilities in a sector. Site-specific permits also carry the expectation of inspections, whereas general permits and permits-by-rule generally do not. Area source facilities may not have the same expectation of inspection as major sources.

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[3] Michigan Department of Environmental Quality. Michigan Air Permits System New Source Review General Permits. "General Permit to Install". http://www.deq.state.mi.us/aps/downloads/permits/GenPmt/General%20Permit%20Program%2001-06.pdf. (Last viewed October 8, 2009).

[4] Ohio Environmental Protection Agency, Division of Surface Water. "General Permits". http://www.epa.ohio.gov/dsw/permits/gpfact.aspx. (Last viewed October 8, 2009).

ENVIRONMENTAL RESULTS PROGRAM

ERP is an innovative approach to improving the environmental performance for sectors or groups of regulated entities characterized by large numbers of small, relatively similar facilities. ERP combines plain language compliance assistance that promotes pollution prevention; facility self-assessment and self-certification; agency inspections; and statistically-based performance measurement. Where necessary, regulators also conduct a comprehensive facility inventory and targeted enforcement actions. These components are intended to work together to improve compliance and reduce environmental impacts of the target sector, while deploying government resources strategically and efficiently. ERP is an integrated approach that often addresses multiple environmental media, and combines efforts involving compliance assistance and measurement. Facilities receive a comprehensive package of information from the state, such as a workbook describing regulatory requirements, best practice suggestions, and self-certification forms.

A typical cycle of ERP involves seven steps: (1) identify the population of facilities in the sector, (2) conduct inspections at a random sample of facilities at the outset of the program (i.e., baseline), (3) offer compliance assistance to all facilities, (4) encourage (or in some cases require) facilities to conduct a self-assessment and submit self-certification forms, (5) conduct a second round of random inspections, (6) compare baseline inspections results to the second round of results, and (7) utilize performance data to inform and improve the next round of compliance assistance. Note that not all ERPs involve all of these steps, since states have adapted the various program components to suit their individual circumstances.

HYBRID APPROACHES

In addition to the three basic approaches discussed above a state may incorporate elements from these different approaches based on the state's specific resources and goals. For example, a state could incorporate a permit requirement into an ERP. South Carolina is creating a workbook (ERP) and combining that with a registration permit. Another state could choose to use a general permit or permit-by-rule, but add statistically-based inspections borrowed from ERP to better measure sector performance and demonstrate progress.

METHODOLOGY

A primary source of information used to develop this guide was interviews with selected states that are using a range of approaches to address auto body and boiler facilities. We interviewed the states shown in Exhibit ES-1, as categorized by permitting/compliance monitoring approach and regulated sector. Interviews were supplemented by reviews of documentation available describing each state's permitting or policy approach for the given sector. In addition to interviews with the states shown in Exhibit ES-1, the authors also conducted additional research (including internet searches, document reviews, and telephone inquiries to state regulators) to provide a more complete picture of how states are using general permits, permits-by-rule, ERP, and hybrid approaches in a range of sectors.

EXHIBIT ES-1. STATES INTERVIEWED IN DEVELOPMENT OF THIS GUIDE

PERMITTING/POLICY APPROACH	REGULATED SECTOR	
	AUTO BODY SHOPS	BOILERS
General Permits	--	Arizona
Permits-by-Rule	Texas	Texas
Environmental Results Program	Rhode Island	--
Hybrid Approaches	South Carolina[5]	Massachusetts[6]

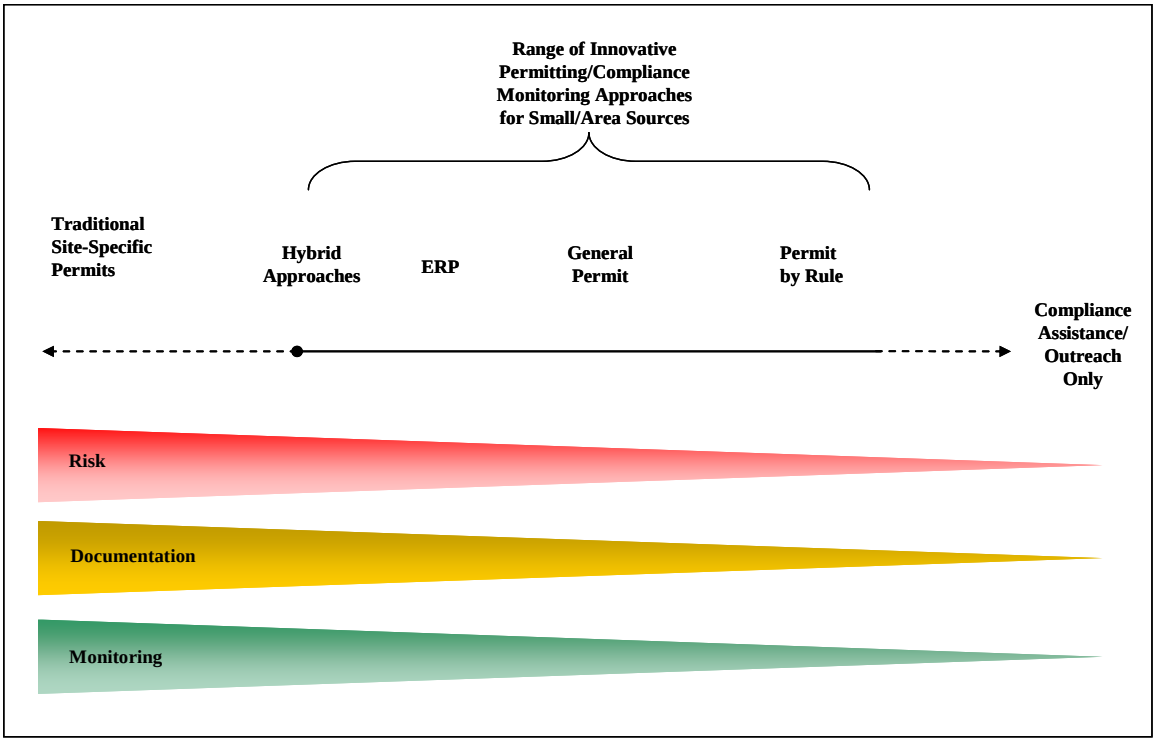
FINDINGS

Through our research, we have found that the permitting and compliance monitoring approaches we reviewed are most suitable for facilities that represent a moderate level of risk: not so much that a traditional site-specific permit would be required, but enough risk that a state wants to go beyond simply providing compliance assistance. The level of environmental risk posed by the facility corresponds to the level of documentation required from facilities, and the level of oversight provided by the state. In other words, facilities that present the most risk require relatively more documentation, and relatively greater compliance monitoring to ensure that facilities do not exceed emissions limits and follow required management practices. Within the set of tools examined in this paper, permits-by-rule require the least documentation and provide for minimal oversight, and therefore are best suited to the least-risk facilities. General permits and ERP require progressively more documentation, and ERP incorporates a measurement component which allows for statistically-based compliance monitoring. Hybrid approaches that combine ERP and a general permit or permit-by-rule require the greatest amount of information from facilities, and seem most likely to help facilities achieve compliance while at the same time helping states measure the extent to which facilities are in compliance. Exhibit ES-2 demonstrates the spectrum of policy approaches available, relative to the following considerations: risk, documentation, and monitoring.

[5] The South Carolina program has been called an ERP, but since it includes a registration permit component, it is classified as a hybrid approach for the purpose of this paper.

[6] The Massachusetts boilers program is typically classified as an ERP. However, because it does not use statistically-based inspections, and because it uses self-certification in lieu of a permit, we have classified it as a hybrid approach (for the purpose of this paper).

EXHIBIT ES-2: SPECTRUM OF POLICY APPROACHES



Given this spectrum of program approaches, states considering how to regulate the auto body or boiler sectors may find it most helpful to consider selecting combinations of specific policy tools to achieve certain regulatory functions or policy goals. Through the course of this research, we have identified eight key functions that state agencies may try to achieve through their programs:

- Alert facilities to program requirements;
- Offer compliance assistance;
- Obtain documentation of facility compliance;
- For facilities out of compliance, obtain documentation of facility plans to achieve compliance;
- Enable onsite inspectors to determine whether facility is in compliance;
- Measure changes in performance;
- Reassess facility performance and update requirements, through renewal; and
- Conduct targeted assessments and enforcement (e.g., based on inspectors or citizen complaints).

Exhibit ES-3 describes a variety of policy tools used to achieve these functions, and shows which tools the states we interviewed have used in combination to achieve their goals.

EXHIBIT ES-3: PROGRAMS USING VARIOUS POLICY TOOLS

POLICY FUNCTION - POLICY TOOLS TO ACHIEVE THAT FUNCTION	SPECIFIC STATE PROGRAMS USING VARIOUS POLICY TOOLS					
	AZ BOILER GEN. PERMIT	TX AUTO BODY PERMIT-BY-RULE	TX BOILER PERMIT -BY-RULE	RI AUTO BODY ERP	SC AUTO BODY ERP-HYBRID	MA BOILER ERP-HYBRID
Alert facilities to program requirements						
- Requirements written into the permit	✓	✓	✓		✓*	✓*
- Self-certification forms	✓			✓	✓	✓
Offer compliance assistance						
- Compliance assistance workbooks				✓	✓	✓
- Outreach	✓	✓	✓	✓	✓	✓
Obtain documentation of facility compliance						
- Permit application/ registration	✓	✓			✓*	✓*
- Self-certification forms	✓			✓	✓	✓
- Emissions inventories	✓	✓				
Obtain documentation of facility plans to achieve compliance						
- Return to Compliance Plans				✓	✓	✓
Enable on-site inspectors to determine whether facility is in compliance						
- Requirement to maintain records on site	✓	✓	✓	✓	✓	✓
Measure changes in performance						
- Statistically-based inspections before and after program implementation				✓	✓	
Renewal						
-Further rounds of outreach and self-certification forms				✓		
Targeted Inspections/Enforcement						
-Targeted inspections as needed	✓	✓	✓	✓	✓	✓
* For South Carolina and Massachusetts, the self-certification form, with accompanying documentation, serves as a permit.						

In addition to these functions, all of the program approaches allow states to encourage development and use of new technologies to reduce emissions and update requirements to reflect such new technologies. These functions are achieved by setting the standards or requirements for regulated entities; the more stringent the requirements, the more facilities, and manufacturers that supply them, will be forced to adopt or develop newer, more efficient technologies. In addition, all of the program approaches reviewed have the potential to encourage pollution prevention by sharing information with facilities about how this can be cost effective. In some cases, states have also developed incentives for facilities to adopt pollution prevention (e.g., by imposing fewer permit requirements for facilities that can demonstrate they have adopted specific pollution prevention practices).

MOTIVATIONS FOR SELECTING PROGRAM APPROACHES

A key question this study sought to answer was *why* states have selected the approaches they are using to address the auto body and boilers sectors. It is stating the obvious to say that states selected the program approaches they did because they felt it was the best option to achieve their goals at the lowest cost to the agency and the regulated community. However, it is important to note that states considered different sets of alternative policy approaches as potential options when they made their decisions, and these alternatives were informed by agency history and experience. Most states interviewed contrasted the program approach they selected with individual, site-specific permits, and decided that case-by-case permitting would be too resource intensive and unworkable for sectors such as auto body shops and boilers. On the other hand, most states interviewed did not recall deciding between the full range of program approaches discussed in this paper.

It is also important to note that states placed different priorities on the various policy functions they were seeking to achieve, and therefore they selected different suites of policy tools to meet their goals. The varying priorities states place on different policy functions is surely informed by the varying levels of resources that state agencies have available, the number of entities they must regulate, the perceived risk of environmental and health impacts from regulated entities, and the geographic span of their territory. For example, there are fewer than 400 auto body shops in Rhode Island, compared to about 5,000 shops in Texas. Some policy tools may take more resources to apply on a large scale; for example, it would probably require an automated system to review permit applications/registrations or self-certification forms for 5,000 facilities, and therefore a state like Texas would likely only make that investment if it viewed the auto body sector as an important source of environmental or health risks for its population. On the other hand, some policy tools are designed to be cost-effective at large scales. For example, to develop a statistically valid baseline measurement of sector performance with a confidence level of 90 percent and a margin of error of 10 percent, a state with 400 shops would need to inspect a random sample of 57 shops. A state with a population of 5,000 shops would need to inspect only slightly more shops (66 shops) to measure baseline performance with the same confidence level and margin of error.[7] Thus, for states interested in performance measurement, it may be worth considering statistically based sampling, especially if they have very large populations of facilities in target sectors.

SUMMARY OF ADVANTAGES AND DISADVANTAGES OF EACH PROGRAM APPROACH

Overall, each state interviewed as part of this study seemed satisfied that the program approach they selected was working well for the target sector and meeting the agency's goals. States pointed out a number of advantages, as well as some disadvantages to the program approaches they selected. Exhibit ES-4 summarizes these findings.

[7] ERP Sample Planner, available online at http://www.epa.gov/erp/roadmap/resources/erp_sampleplanner_nodate.xls. (Last viewed October 1, 2008).

EXHIBIT ES-4. ADVANTAGES AND DISADVANTAGES OF VARIOUS PROGRAM APPROACHES

PROGRAM APPROACH	ADVANTAGES	DISADVANTAGES
General Permits	▪ State develops one permit for all facilities; this is cost effective for regulators and facilities, compared to site specific permits or ERP. ▪ Facilities can add new sources to their general permit relatively easily, compared to site-specific permits.	▪ To operate efficiently, general permits must allow less flexibility for regulated facilities (compared to site-specific permits). If a facility is operating equipment not covered under a general permit, it must apply for an individual permit. Likewise, if the state finds that an ineligible piece of equipment is common to many or all of the facilities in an industry, the state will need to modify the general permit.
Permits-by-Rule	▪ Minimal burden on state agencies and regulated facilities. ▪ Facilities can construct new sources more quickly because they typically do not need to wait for an authorization to construct. ▪ Depending on how the permit-by-rule is written, it can be relatively easy to update a permit-by-rule as newer equipment becomes available.	▪ If notification is not included in the permit-by-rule, facilities may not be aware of their requirements, and the state would have no way of knowing which facilities are subject to the Rule. ▪ As renewals are generally not required for facilities already permitted, older facilities may be operating with non-compliant technology. ▪ Measuring changes in performance is very difficult, particularly if notification is not required.
Environmental Results Program	▪ Well suited to deal with multi-media issues. ▪ Simplify process for small entities by consolidating materials and information. ▪ Statistically-based inspection process quantifies changes in performance for the whole sector. ▪ Compliance assistance workbook is well suited to assist facilities to understand compliance requirements and encourage facilities to go beyond the regulatory requirements through pollution prevention practices. ▪ In some cases, it may be easier for an agency to develop an ERP than to establish permitting requirements. In the case of area source rules, ERPs will have to be mandatory, which may not be easier to develop.	▪ ERP seems to require relatively more staff time and resources to implement (at least compared to permits-by-rule), although fewer resources are required compared to traditional site-specific permits. ▪ Materials developed for a specific sector do not transfer to another sector. On the other hand, materials from other states that have developed ERPs for the same sector may be adapted.

PROGRAM APPROACH	ADVANTAGES	DISADVANTAGES
Hybrid Approaches	▪ Advantages depend on the tools combined. For example, combining ERP with a general permit may offer the benefits of compliance monitoring, with the requirement that a facility submit a self-certification form, which serves the function of a permit.	▪ Disadvantages depend on the tools combined. For example, an ERP-like approach without a statistically-based measurement component could offer cost savings, but would not provide a strong compliance-monitoring function.

RECOMMENDED CONSIDERATIONS FOR SELECTING PROGRAM APPROACHES AND POLICY TOOLS

States that are considering developing a program to address auto body shops or boilers clearly have a choice between several program approaches, and a range of specific policy tools to meet their goals. An important first step in selecting an approach or policy tool is to understand the agency's goal(s) for the program. For example, is the agency seeking to achieve measureable behavior changes in the sector, ensure that all facilities have a permit because it is required by state law, and/or implement federal requirements (such as those included in the area source rules)? Whatever the agency's goals, they should be clearly defined and articulated among agency staff. As part of the discussion of goals, the agency should consider the relative priority it places on various policy functions, such as those discussed earlier.[8]

Next, the agency should identify a range of possible program approaches and policy tools, such as those described in this guide, that the agency could implement. Given the state's statutory framework, regulations, and history, states may have different sets of policy tools that they can use to achieve their goals. For example, some states have a regulatory framework in place for general permits or permits-by-rule, while in other states such permitting mechanisms may not be readily available. Keep in mind that program approaches could focus on setting standards for manufacturers or equipment suppliers, in lieu of regulating individual facilities, in cases where specific types of equipment that lead to emissions of concern are well defined and standard across the sector.

Finally, the agency should consider a range of factors that could influence its choice of policy tools. We suggest several such factors below.

Level of Environmental Protection

Ideally, the level of risk that a facility poses would match the attention that facility receives from the regulator and the facility. Each of the three programs described in this guide seek to reduce the environmental risk posed by area source facilities. However, the level of attention given to individual facilities varies with each program. Permits-by-rule require the least amount of commitment and contribution from facilities, and therefore provide little assurance that facilities are in compliance. ERP, on the other hand, requires a relatively high level of participation and commitment from facilities, and provides quantitative measures of sector performance. For those sectors that present a relatively higher environmental risk, ERP or ERP *plus* a general permit or permit-by-rule may be a better choice, since a more hands-off approach such as a permit-by-rule may not ensure compliance.

[8] These policy functions include alerting facilities to program requirements; offering compliance assistance; obtaining documentation of facility compliance; obtaining documentation of facility plans to achieve compliance for facilities out of compliance; enabling onsite inspectors to determine whether facility is in compliance; measuring changes in performance; renewing the program; and conducting targeted inspections/enforcement.

Number of Facilities
Both the auto body and boilers sectors have a relatively large number of facilities, but the number of facilities in any given state varies. As noted earlier, certain policy tools are well suited to efficiently address a large number of facilities, while other policy tools require more resources to address a larger number of facilities. For example, statistically-based inspections can be used cost effectively in sectors with a large number of businesses, and permits-by-rule can likewise be easily implemented in sectors with many facilities. On the other hand, any policy tool that requires the state agency to review submissions from facilities (e.g., permit applications, emissions inventories, or self-certification forms) will be more difficult to implement in sectors with a large number of facilities. States will either need to dedicate staff to reviewing facility submissions, or develop automated systems to scan facility materials and highlight facilities that need individual attention by agency staff.

Similarity of Operations
Although area source rules generally address sectors with similar operations, there are gradations in the degree of similarity of operations within a given sector. For example, facilities with small industrial/commercial/institutional boilers have very similar boiler equipment and operations. On the other hand, in the auto body sector, facilities can vary from highly automated, professional shops, to backyard operations. Where states anticipate a range of different equipment or operations in a sector, they will need to be able to carefully define these different categories of facilities and explain the requirements that apply to each. Among the program approaches discussed here, permits-by-rule are probably the least suited to allow flexibility for different types of equipment because they provide for the least amount of information submitted by the facility, and therefore it would be difficult for regulators to determine whether facilities had understood the specific requirements that applied to their type of operations.

Size of Facility Operations
The relative amount of resources available to a facility can influence the degree to which it can participate in various program options. For example, if a facility has more time and money to spend on compliance efforts, they are more likely to be able to participate in programs that require them to review materials and submit information to a state agency. On the other hand, if a facility is much smaller, and has little or no staff time to spare, it may be harder to get that facility to participate in a more strenuous compliance effort. In addition, larger facilities may be more likely to already employ industry standard equipment, or equipment that meets the regulatory requirement. Permits-by-rule require the least amount of resources from the facility, as they are in some cases not required to submit any paperwork at all. General permits and ERPs require a little more effort, as the facility must submit a permit application and/or self-certification form, with accompanying materials.

Knowledge and Expertise on Site
Similar to the consideration of the size of the operations of facilities in the target sector, the regulator should also consider the knowledge and expertise of the staff on site at the facilities. For example, ERPs are designed to educate facilities about their compliance requirements, and help them understand what they need to do to comply. On the other hand, general permits and permits-by-rule may provide little support for facilities to understand their compliance requirements, and may need to be supplemented by additional outreach and compliance assistance if facilities in the sector do not have the needed environmental expertise.

Agency Resources
The regulator should also consider the resources that it has to expend on the regulatory effort. Just as the three approaches require different levels of resources from facilities, they also require different levels of resources from the regulator. During program development, all three approaches may require significant effort; although at least one state agency (RI DEM) felt that developing an ERP would be easier than

developing permitting requirements. However, once program implementation has begun, permits-by-rule generally seem to require the least resources and staff time, while ERPs and general permits require more attention and staff time to implement, depending on the specific requirements of the program. For example, ERPs generally include statistically-based pre- and post-certification inspections (although these inspections can be done as a component of any of the policy approaches), which requires resources of inspectors or other individuals who are trained to review facility operations on site.

Economies of scale

This document provides guidance to regulators for selecting an implementation approach for the auto body and boilers area source rules. However, since October 16, 2009, the EPA has promulgated a total of 62 area source rules, and will eventually promulgate the remaining 8 area source rules. While it is likely not appropriate for regulators to choose a single approach for all area source rules, there may be economies of scale if a state commits to investing in a certain program approach for a number of area source rules. For example, if a regulator chooses the ERP approach for all of the area source rules, the regulator will gain valuable institutional knowledge and infrastructure (e.g., reporting systems) about ERPs that can be applied to multiple area source rules. However, certain program materials will need to be developed for each new area source (e.g., self-certification checklist and compliance assistance workbook).

CONVERGING TRENDS POINT TO INNOVATIONS IN AIR PERMITTING

Several converging trends are leading state permitting authorities to explore how to effectively and efficiently control air emissions at small, area sources.[9] EPA offices with an interest in the future of air permitting have worked together to identify several emerging trends, including the following:[10]

- **Permitting authorities are under increasing pressure to improve service delivery, while being asked to do more with fewer resources.** States are seeking to reduce permitting timelines and become more focused on customer service. State agency budgets are also under pressure from reductions in federal grants and other factors that constrain resource availability.

- **Air permitting programs are maturing and increasing their attention to improving program efficiency and quality**. The initial round of Title V permit issuance has wrapped up in many jurisdictions, enabling permitting authorities to shift resources to other permitting activities and to explore opportunities for improving program efficiency and quality. EPA also has a strong interest in supporting these types of program improvements**.**

At the same time, **EPA and states are being asked to address new sectors that contribute to urban air toxics.** The Clean Air Act (CAA) requires EPA to identify air toxics that pose the greatest potential health threat in urban areas, and to identify and develop standards for the area source categories that represent the majority of emissions of these air toxics. EPA identified 33 air toxics that pose the greatest potential health threat in urban areas. EPA named a total of 70 area source categories that represent 90 percent of the emissions of these urban air toxics associated with area sources.

EPA has been developing standards for each of these area source categories. Between 2006 and October 2009, the Agency promulgated 62 final area source rules that regulate a variety of sectors (please see Appendix A for a full list of promulgated and proposed rules).[11] Eight additional area source standards

[9] Area sources are sources of toxic air pollutants that have the potential to emit less than 10 tons per year of a single air toxic or less than 25 tons per year of any combination of air toxics.

[10] These EPA offices include the Office of Policy, Economics and Innovation (OPEI), Office of Policy Analysis and Review (OPAR), and Office of Air Quality Planning and Standards (OAQPS) within the Office of Air and Radiation. High-level representatives from these offices, called the OPEI/OPAR/OAQPS Partners, commissioned a study entitled "Air Permit Program Implementation: A Roadmap for Innovation," which was finalized in April 2006. This Roadmap identified the two trends bulleted above, and was a starting point for the research described in this report.

[11] For a current description of which area sources have been regulated see EPA's Area Source Standards website at http://www.epa.gov/ttn/atw/area/arearules.html#gen, and in particular review the Compilation of All Completed Area Source Rules at http://www.epa.gov/ttn/atw/area/compilation.html. (Last viewed September 24, 2009).

are currently under development.[12] The standards require a specific degree of emission reduction that the EPA determines to be achievable by each particular source category. Standards may include requirements that area sources use certain types of control technologies or business practices that prevent pollution. New sources (i.e., those that are constructed after the standard is proposed) must comply with the standard immediately upon start-up of operations. Existing sources typically have more time in which to come into compliance with the standards, and the compliance schedule is specified in each area source rule.

A number of sectors that are or will be subject to area source rules are made up of small businesses such as auto body shops, dry cleaners, gasoline distributors, and electroplaters. Each of these sectors, when considered in aggregate, contributes measurably to the 30 hazardous air pollutants posing the greatest health threat in urban areas (hence, their inclusion as area sources). However, individual facilities within these sectors are typically small sources of emissions. Given the large number of these entities in each state, states may consider it impractical or inefficient to regulate these sources using traditional tools such as site-specific permits. For states that are interested in going beyond compliance assistance and establishing a permitting and/or compliance monitoring approach with these sectors, this guide is intended to describe a range of approaches that states have used to address small business sectors.

EPA's Area Source Rules workgroup is currently in the process of developing guidance for implementation of the Area Source Rules. The draft guidance describes a range of compliance, monitoring, and enforcement approaches, and suggests how they may be applied to different groups of area source sectors which have been prioritized based on the rule's potential for emission reductions. For lower priority sectors, the draft guidance recommends focusing on compliance assistance, rather than compliance monitoring. Factors that may suggest greater emphasis on compliance monitoring include a large number of affected facilities, elevated risk associated with emissions from the target sector, existing state or local priorities, or facilities located near sensitive populations (e.g., children or the elderly) or in minority/low income communities.[5]

PURPOSE AND SCOPE OF THIS GUIDE

The primary purpose of this Area Source Tool Selection Guide is to:

- **Inform permitting authorities about permitting and policy tools** available for addressing small/area sources of hazardous air emissions, and to
- **Assist permitting authorities in selecting the most suitable innovative tools** to meet their needs and circumstances.

This guide is intended to help state permitting authorities that are seeking to establish effective and efficient compliance monitoring or permitting tools for new area source sectors. It is not intended to serve as a formal guidance document; rather, it is a review of permitting options for implementing area source rules. The guide will highlight the experiences of several permit authorities that are using innovative tools.

This guide focuses on four options for implementing area source rules: general permits, permits-by-rule, the Environmental Results Program (ERP), and hybrid approaches. General permits and permits-by-rule are very popular: more than 30 state and local permitting authorities have developed general air permits

[12] U.S. EPA, Area Source Standards: Standards to be Promulgated. http://www.epa.gov/ttn/atw/area/arearules.html#final. (Last viewed October 26, 2009).

or permits-by-rule for some source types.[13] These permitting tools are intended to provide an efficient, consistent way of addressing emissions from large numbers of relatively similar, low-risk facilities. ERP is an innovative compliance monitoring and assistance approach intended to improve facilities' management practices within small business sectors. To date, 19 states have developed or are implementing at least one ERP to address environmental issues in one of 24 sectors; seven of these states have applied ERP in the auto body sector.[14] Hybrid approaches involve combining components of the three basic approaches (general permits, permits-by-rule, and ERPs). More information on each of these approaches, and how they relate to other compliance strategies, is included in Chapter 2.

This guide describes how these tools have been applied to two sectors covered by the area source rules: auto body shops and institutional/commercial/industrial boilers. We selected these sectors as the focus of this guide because they have been addressed by a variety of state permitting/compliance monitoring approaches, and because they are at different states of area source rule development. Specifically, we selected one sector (auto body) for which an area source rule has already been developed, and another sector (boilers) for which a rule will be promulgated in the future. The status of each of these rules, and how this guide will inform the implementation of them, is described below:

- The rule that affects auto body shops, the "Paint Stripping and Miscellaneous Surface Coating" rule, was promulgated in January 2008, and existing sources will be expected to comply with the rule by 2011. This guide describes a range of innovative permitting and implementation options that could be used to implement the area source rule affecting auto body shops.

- The boilers rule has been delayed and a target date for promulgation has been set for December 16, 2010.[15] Since this rule is still under development, this guide focuses on describing innovative approaches states are using to address institutional, commercial, and industrial boilers that may inform states seeking to regulate boilers, as well as EPA as it develops the area source rule for boilers.

This guide is intended to be useful not only for state permitting authorities charged with regulating auto body shops and boilers, but also for EPA regions that want to counsel states regarding their options for regulating these sectors. In some cases, if states choose not to take delegation of area source rules, EPA regions may need to implement area source rules directly, in which case the innovations described in this guide may also be of interest to the regions.

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[5] For more information on the draft guidance, please contact Scott Throwe at throwe.scott@epa.gov.

[13] Air Permit Program Implementation: A Roadmap for Innovation Final Briefing Paper, Prepared for EPA OPEI/OPAR/OAQPS Partners, April 17, 2006.

[14] ERP States Consortium. "ERP Sectors". http://www.erpstates.org/ERPsectors.aspx.

[15] The reason for the delay is that on July 30, 2007, a court decision vacated and remanded the rule regulating emissions from boilers and process heaters that are located at facilities considered to be major sources of air toxics. Since the rule affecting major source boilers is under review, the related rule affecting boilers at area sources of air toxics cannot be developed until the underlying issues are resolved.

KEY QUESTIONS ADDRESSED IN THIS GUIDE

This guide seeks to answer the following questions, in order to help state permitting authorities and regions identify and select innovative tools available for addressing toxic air emissions from auto body shops and boilers:

- What permitting and compliance monitoring approaches are states currently using to address air toxics emissions from area sources, specifically for the auto body and boilers sectors?
- Why have states selected the approaches they are using to address these sectors?

- What are the advantages and disadvantages of each approach in terms of:

  - Suitability given sector characteristics (e.g., number, size, and homogeneity of regulated entities);
  - Appropriateness given environmental and health risks posed by the sector;
  - Likelihood of generating environmental results/compliance;
  - Cost and cost-effectiveness for regulators and regulated entities; and
  - Ability to measure changes in environmental performance.

- For the auto body shop sector only: To what degree are existing approaches compatible with the Paint Stripping and Miscellaneous Surface Coating area sources rule? To the extent that there are differences between existing permitting and policy approaches at the state level and the federal area source rule, what adaptations and/or flexibility would be required to make the state and federal approaches compatible?

SOURCES OF INFORMATION USED IN DEVELOPING THIS GUIDE

A primary source of information used to develop this guide was interviews with selected states that are using a range of approaches to address auto body and boiler facilities. The authors sought to identify states using general permits, permits-by-rule, ERP, and hybrid approaches from different regions of the country. Exhibit 1 -1 lists which states were interviewed, and also shows which sector and permitting/compliance monitoring approach is used in each state. Note that most of the state programs reviewed are well-established, however the program in South Carolina is still under development. Interviews were conducted between May and September 2008. Interviews were supplemented by reviews of available documentation describing each state's permitting or policy approach for the given sector. In addition to interviews with the states shown in Exhibit 1-1, the authors also conducted additional research (including internet searches, document reviews, and telephone inquiries to state regulators) to provide a more complete picture of how states are using general permits, permits-by-rule, ERP, and hybrid approaches in a range of sectors.

EXHIBIT 1-1. STATES INTERVIEWED IN DEVELOPMENT OF THIS GUIDE

PERMITTING/POLICY APPROACH	REGULATED SECTOR	
	AUTO BODY SHOPS	BOILERS
General Permits	--	Arizona
Permits-by-Rule	Texas	Texas
Environmental Results Program[16]	Rhode Island	--
Hybrid Approaches	South Carolina[17]	Massachusetts[18]

ORGANIZATION OF THIS GUIDE

Chapter 2 of this guide provides background information on the four different permitting/compliance monitoring approaches discussed in this guide (general permits, permits-by-rule, ERP, and hybrid approaches). The chapter then provides a brief overview of the auto body and boilers sectors, as well as a summary of area source rules affecting these sectors. The chapter concludes with an overview of states that are applying general permits, permits-by-rule, ERP, and hybrid approaches in the auto body and boilers sectors.

Chapter 3 presents the findings from interviews conducted with the six states shown in Exhibit 1-1. Specifically, the chapter uses information from interviews with states to describe: 1) what permitting and/or compliance monitoring tools the states have used to address the specified sector, 2) what factors motivated states to select those tools; and 3) the states' perspective on the advantages and disadvantages of each option.

Chapter 4 summarizes the findings from our research, and seeks to answer the key questions outlined earlier in this introduction. This chapter also suggests implications for regulators in considering how to select policy tools to implement area source rules.

THE APPENDICES TO THIS GUIDE PROVIDE A LIST OF PROMULGATED AND DRAFT AREA SOURCE RULES AND DESCRIBE THE INTERVIEW QUESTIONS USED IN COMPILING THE FINDINGS FROM INTERVIEWS PRESENTED.

[16] In addition to the ERP programs listed, we also interviewed a staff person from the Colorado Department of Public Health and Environment, Hazardous Materials and Waste Management Division (HMWMD), regarding the state's auto body self-certification program. This program is similar to, and informed by ERP, but it focuses on compliance assistance and self-certification, and does not include the statistically-based inspection component of ERP. Although we intended to include this state's experience as part of our findings, we have not included a description of Colorado's program in this report because it is primarily oriented around hazardous waste issues. Colorado's self-certification checklist does include one question regarding whether the auto body shop has filed for a state Air Pollution Emissions Notice, which is an indication that the shop has air emissions above a state threshold. HMWMD hopes to incorporate multiple environmental media into its program, and would like to coordinate with the state air program to make this happen when sufficient resources are available.

[17] The South Carolina program has been called an ERP, but since it includes a registration permit component, it is classified as a hybrid approach for the purpose of this paper.

[18] The Massachusetts boilers program is typically classified as an ERP. However, because it does not use statistically-based inspections, and because it uses self-certification in lieu of a permit, we have classified it as a hybrid approach (for the purpose of this paper).

CHAPTER 2 | BACKGROUND

This chapter summarizes four different permitting/compliance monitoring approaches: general permits, permits-by-rule, ERPs, and hybrid approaches. The chapter then discusses the auto body and boilers sector in general, with summaries of the applicable area source rules. Finally, the chapter concludes with an overview of states that are applying general permits, permits-by-rule, ERPs, and hybrid approaches in the auto body and boiler sectors.

OVERVIEW OF PERMITTING/COMPLIANCE MONITORING APPROACHES

The Clean Air Act instructs the EPA to encourage and support state strategies to reduce air emissions from sectors classified as area sources.[19] In fact, states are currently using a variety of permitting and compliance monitoring tools to address the auto body and boilers sectors. Three tools explored in this guide are summarized below: general permits, permits-by-rule, and ERP. We also describe a set of hybrid approaches that combine elements of the three main tools. Each of these tools is suitable for sectors or groups of regulated entities that have numerous, similar, and relatively small facilities and sources. Each of these tools is designed to address sources that:

- Pose relatively little environmental and health risk compared to large, complex facilities (where site-specific permitting is essential to protecting public health and the environment and allowing for adequate public involvement in the permitting process), and yet

- Pose sufficient risk that states feel compelled to use some form of permitting or compliance monitoring (i.e., where compliance assistance alone is not sufficient).

States' perspectives vary about which sectors are included in "intermediate" risk level, and which tools are appropriate to address this level of risk, as will be described later in this chapter.

GENERAL PERMITS

General permits are applicable to a class or category of facilities with similar characteristics. The state develops permit conditions that apply to all facilities within the regulated sector. The state then proposes a draft permit, which is submitted for public comment. Once the permit has been finalized, individual facilities apply to be covered under the general permit by demonstrating compliance with the permit terms. General permits commonly require facilities to submit an application, which includes evidence of their eligibility for the permit. The extent of information required varies. For example, Michigan's general air permit program, which covers the installation of new sources in several sectors, requires that facilities certify that they meet certain emission limits, material limits, process/operational limits, equipment and testing requirements, and proof of monitoring and recordkeeping.[20] On the other hand,

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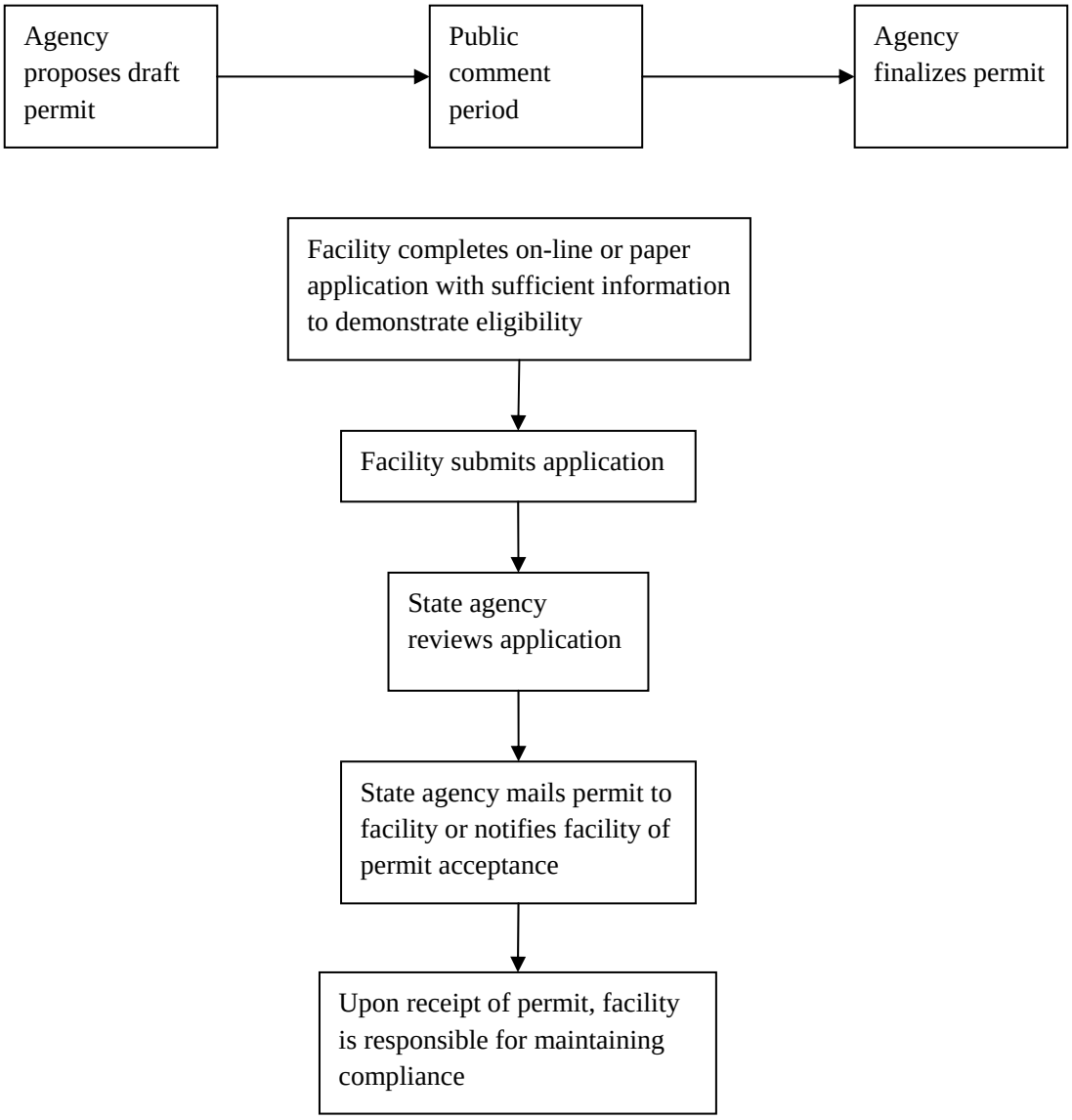
[19] Clean Air Act. Section 112(k)(4).

[20] Michigan Department of Environmental Quality. Michigan Air Permits System New Source Review General Permits. "General Permit to Install".

Ohio's permit for wastewater and stormwater discharges has a simple, one-page paper application form that must be sent in, but requires no effluent information from the applicant.[21] The application process also varies across states; usually there is an on-line or paper application form that is submitted to the agency. The agency reviews that form, and if the application shows that the facility is in fact eligible for the general permit, the agency sends the general permit back to the facility. No site-specific review for each facility is required, and the general permit typically only undergoes a single public comment process at the time that the state-wide permit is established or renewed. Exhibit 2-1 illustrates an example of the steps in the general permit process.

EXHIBIT 2-1: EXAMPLE OF GENERAL PERMIT PROCESS



http://www.deq.state.mi.us/aps/downloads/permits/GenPmt/General%20Permit%20Program%2001-06.pdf. (Last viewed October 8, 2009).

[21] Ohio Environmental Protection Agency, Division of Surface Water. "General Permits". http://www.epa.ohio.gov/dsw/permits/gpfact.aspx. (Last viewed October 8, 2009).

Title V of the Clean Air Act (CAA) allows for general permits. Specifically, section 504 of the CAA states that, "The permitting authority may, after notice and opportunity for public hearing, issue a general permit covering numerous similar sources. Any general permit shall comply with all requirements applicable to permits under this subchapter. No source covered by a general permit shall thereby be relieved from the obligation to file an application under section 7661b of this title."[22]

The general permitting process is designed to save regulators and facilities resources (application fees, staff time, etc.), when compared to application and review of a site-specific permit. For example, New Jersey regulators found that over a ten year period, a gas station with three storage tanks would spend $700 on its general permit, versus $3,300 on a site-specific permit.[23] General permits can cover facility construction, operation, or both. Examples of the requirements for general permits for a select number of states and examples of sectors within each state are listed below, in Exhibit 2-2.

[22] US EPA Clean Air Act Title V website, http://www.epa.gov/air/caa/title5.html. Link to Clean Air Act Section 504/US Code Section 7661c "Permit requirements and conditions" Last viewed October 8, 2009.

[23] New Jersey Department of Environmental Protection. “General Permits and Permits-by-Rule: When Less is Better”. Presentation dated September 6, 2006. http://www.cleanairinfo.com/airinnovations/2006/presentations/Wednesday/Concurrent%201B/GPs%20and%20Permits%20by%20Rule%20Denver%20-%20Jim%20Marinucci.pdf. (Last viewed October 8, 2009).

EXHIBIT 2-2: SUMMARY OF EXAMPLE GENERAL PERMIT PROGRAMS BY STATE AND SECTOR

STATE	SECTORS - EXAMPLES	APPLICABILITY (AS DESCRIBED BY STATE AGENCY)	CHARACTERISTICS/APPLICATION PROCESS
Michigan[24]	• Anhydrous ammonia storage and handling • Propane or natural gas-fired boilers • Coating lines emitting up to 10 tons per year of VOCs • Nonmetallic mineral crushing facilities • Groundwater and soil remediation processes for petroleum products • Diesel fuel-fired engine generators • Ethylene oxide sterilizers	Intended for facilities with: • Processes that produce the same or reasonably similar products • Processes that emit the same or similar air contaminants • Methods for capturing and controlling air contaminants that are the same or limited to a small number of specific alternatives • Processes that are subject to the same emission limitations, monitoring requirements, federal standards, or state rules	• General permit to install • Must apply for coverage • Must certify that equipment facility will be installing meets necessary criteria for applicability and that facility will comply with the special conditions of the permit (e.g., emission limits, material limits, process/operation limits, equipment, testing, monitoring and recordkeeping requirements) • Permit Section staff reviews application for completeness, mails permit to facility
Wisconsin[25]	• Rock crushing plants • Hot mix asphalt plants • Printers	Intended for facilities that: • Perform the same or similar operations • Emit similar air contaminants • Use the same or similar emission control technologies • Are subject to the same limitations, standards, and requirements	• General construction and general operation permits • Application requires information on the facility's equipment (including make, model, capacity, fuel type, and other parameters) and project details (for construction permits) • Rock crushing plants and printers must also certify applicability and compliance • Rock crushing plants must submit return to compliance plans along with application if currently out of compliance • Decision made within 15 days of application receipt

[24] Michigan Department of Environmental Quality. Michigan Air Permits System New Source Review General Permits. "General Permit to Install". http://www.deq.state.mi.us/aps/downloads/permits/GenPmt/General%20Permit%20Program%2001-06.pdf. (Last viewed October 8, 2009).

[25] Wisconsin Department of Natural Resources. "General Permits". http://www.dnr.wi.gov/air/permits/streamlining/GeneralPermits.html. (Last viewed October 8, 2009).

STATE	SECTORS - EXAMPLES	APPLICABILITY (AS DESCRIBED BY STATE AGENCY)	CHARACTERISTICS/APPLICATION PROCESS
New Jersey[26]	• Single boilers • Storage/transfer of service station fuels • Emergency generators • Multiple boilers/heaters • Bulk solid materials receiving & storage	• Simple, common source categories with fixed set of pre-defined conditions • Can apply to only one source, or to a class of sources located at the same facility	• Registration-like process: Submit online or paper form, permit mailed to source • Facility can begin operating as soon as the registration form is received by the agency • Agency does not review the registration form for approval, but the form does contain identifying and operating information for the facility and requires the registrant to demonstrate compliance • Non-negotiable • Once permit is issued, facility is fully responsible for compliance
Oklahoma[27]	• Dry cleaning • Hot mix asphalt • Major natural gas compressors • Oil & gas facilities (minor facilities) • Printing or packaging	• Facilities with similar operations, emissions, and activities that are subject to the same standards, limitations, and operating and monitoring requirements	• Permit to construct and operate • Applications require only the information needed to assure that the facility is eligible for the general permit, and complies with its requirements • Facility must receive an Authorization to Construct or an Authorization to Operate after submitting its application and before operating or beginning construction from the Agency • Pre-approved changes, so that authorization is not required to add or remove equipment

[26] New Jersey Department of Environmental Protection, Air Quality Permitting Program. http://www.nj.gov/dep/aqpp/gp.html. Also, "General Procedures for General Permits". http://www.nj.gov/dep/aqpp/downloads/general/General%20Procedures.pdf. (Last viewed October 8, 2009).

[27] Oklahoma Department of Environmental Quality. "General Permits". http://www.deq.state.ok.us/aQDnew/permitting/genperm.htm. (Last viewed October 8, 2009).

STATE	SECTORS - EXAMPLES	APPLICABILITY (AS DESCRIBED BY STATE AGENCY)	CHARACTERISTICS/APPLICATION PROCESS
Indiana[28]	• Wastewater discharges for sources including coal mining, processing, and reclamation activities; petroleum products terminals; and sand, gravel, dimension stone or crushed stone operations • Several air sources with "low emissions", including auto body shops, stone crushers, sand and gravel operations, and certain paint operations	• Applicant must agree to comply with pre-set limits for emissions and discharges • Small, similar facilities	• Facilities submit on-line application form • Public notice process required for wastewater and drinking water permits
Ohio[29]	• Coal surface mining[30] • Construction site stormwater • Concentrated animal feeding operations • Small sewage treatment systems	• General National Pollutant Discharge Elimination System (NPDES) permit that covers facilities with similar operations and type of discharge • Affords coverage to new and existing dischargers that meet the eligibility criteria given in the general permit • Covers discharges with minimal affect on the environment	• One-page application form (which does not require effluent information) • Issued for up to five years • Sends application in on paper, decision/permit is mailed to applicant

[28] Indiana Department of Environmental Management. Guide for Citizen Participation; Chapter 6: Categories of Permits". http://www.ai.org/idem/6066.htm. (Last viewed October 8, 2009).

[29] Ohio Environmental Protection Agency, Division of Surface Water. "General Permits". http://www.epa.ohio.gov/dsw/permits/gpfact.aspx. (Last viewed October 8, 2009).

[30] The general permit does not cover discharges that are addressed by an effective individual NPDES permit or stormwater discharges that the Director of the Ohio EPA determines contribute to a violation of a water quality standard. Discharges to state surface waters designated as Superior High Quality Waters, Outstanding State Waters, and Outstanding National Resource Waters are not eligible for coverage under the general permit renewal.

PERMIT- BY-RULE

Permits-by-rule are quite similar to general permits, in that they are generally intended to cover multiple, similar, small sources of emissions. The requirements for an area source operating under a permit-by-rule are written into state regulations. A source must determine if it meets the criteria for operating under a permit-by-rule and then operate in compliance with the requirements. In some cases, facilities are required to keep documentation demonstrating compliance (e.g., monitoring records) on site.

States vary with regard to their requirements for facilities to submit information to the state concerning their coverage under a permit-by-rule. In some cases facilities are required to notify or register with the agency responsible for implementing that regulation, and certify that they are in compliance with applicable requirements. In general, this notification serves as the permit (i.e., a separate permit is not sent to the facility). In other cases, permits-by-rule do not require notification. In these cases, facilities are not required to register for the permit or inform the state that they are subject to permit requirements. For example, in Colorado, generators of hazardous waste are authorized to treat certain wastes without having to go through the formal permitting process. Instead, generators must develop and implement a written waste analysis and treatment plan, which needs to be retained in the generator's operating records. The facility does not have to submit any formal application for the permit-by-rule, nor do they have to submit their operational plan.[31] In Michigan, construction operators that disturb between one and five acres do not need to meet the submittal requirements of the permit-by-rule; they have automatic coverage under the permit-by-rule.[32] Regardless of the registration or notification requirements, all facilities subject to a permit-by-rule are required to operate in compliance with the terms of the permit-by-rule. Note that some programs require a review and authorization of the registration before the facility can operate, while others do not require approval before the source begins operating or installs equipment. In cases where authorization is required, the permit-by-rule application process is equivalent to a general permit application process.

Exhibit 2-3 summarizes some examples of state permit-by-rule programs.

[31] Colorado Department of Public Health and Environment, Hazardous Materials and Waste Management Division. "Hazardous Waste Generator Treatment Permit by Rule". http://www.cdphe.state.co.us/HM/pnc/pbrgenerator.pdf. (Last viewed October 8, 2009).

[32] Michigan Department of Environmental Quality. "Permit-by-Rule for Stormwater from Construction Activities". http://www.deq.state.mi.us/documents/deq-water-npdes-stormwater-Construction_Q&A.doc. (Last viewed October 8, 2009).

EXHIBIT 2-3: SUMMARY OF EXAMPLE PERMIT-BY-RULE PROGRAMS

STATE	SECTORS - EXAMPLES	APPLICABILITY (AS DESCRIBED BY STATE AGENCY)	CHARACTERISTICS/APPLICATION PROCESS
Colorado[33]	• Hazardous waste generator treatment	• Generators wanting to treat their own hazardous wastes on site before shipping the waste off site for continued treatment, storage, or disposal	• Allows generators to treat certain wastes without having to go through the formal permitting process • No formal application process • Must develop and implement written waste analysis plan, and keep on site
Texas[34]	• Several categories of applicable sectors – must meet list of requirements to apply, e.g.: o Aggregate and pavement o Combustion o Surface coating and preparation	• Emissions from the facility may not exceed 250 tons per year of carbon monoxide or nitrogen oxides, or 25 tons per year of volatile organic compounds, sulfur dioxides, or particulate matter	• Registration is required • Must meet list of requirements to apply • Fill out registration and fee • Mailed application serves as permit
Ohio[35]	• Emergency electrical generators • Small crushing and screening plants • Auto body refinishing facilities • Gasoline dispensing facilities • Natural gas fired boilers and heaters • Printing facilities	• Well-defined, low-emitting air pollution sources • Large number (greater than 300) of sources • Sources similar in design, operations, and with few air pollution regulations • Sources that do not need to employ add-on pollution control devices and do not require emission stack testing • Source employs a proven type of technology or clean design that is unlikely to change in the future	• Each permit-by-rule contains qualifying criteria, emissions limitations, conditions for operations, and requirements for record keeping and reporting • Permit-by-rule exempts facility from site-specific permitting process • Written notification serves as the permit

[33] Colorado Department of Public Health and Environment, Hazardous Materials and Waste Management Division. "Hazardous Waste Generator Treatment Permit by Rule". http://www.cdphe.state.co.us/HM/pnc/pbrgenerator.pdf. (Last viewed October 8, 2009).

[34] Texas Commission on Environmental Quality. "Claiming a Permit by Rule". http://www.tceq.state.tx.us/permitting/air/permitbyrule/claim_pbr.html. (Last viewed October 8, 2009).

[35] Ohio Office of Compliance Assistance and Pollution Prevention. "Permit-by-Rule for Air Pollution Sources". July 2005. http://www.epa.ohio.gov/portals/27/pbr/PBRFactsheet.pdf. (Last viewed October 8, 2009).

STATE	SECTORS - EXAMPLES	APPLICABILITY (AS DESCRIBED BY STATE AGENCY)	CHARACTERISTICS/APPLICATION PROCESS
Nebraska[36]	• Asphalt plants • Small animal incinerators (cremation)	• New, non-major sources of pollution • Source cannot be located in a nonattainment area	• Do not have to apply for operating permits if covered under the permit-by-rule • Notice of Intent, which has a checklist of conditions, serves as the permit. Written approval is sent back to applicant
Idaho[37]	• Rock crushers • Certain dairies	• Rock crushers: equipment is portable, and operates no longer than 12 consecutive months in a single location. Fugitive dust must be controlled • Dairies: farms with capacity to produce 100 or more tons of emissions per year. (Dairy farms with fewer than the specified number of animal units or mature cows may opt into the permit-by-rule program as well)	• Rock crushers: application sent in, facility must wait 15 days and then written confirmation is sent o Monitoring and record keeping requirements o 15 day turn around time for application • Dairies: must register with DEQ and Iowa State Dairy Association (ISDA). Registration contains information on size and type of farm as well as its best management practices o Within 30 days of receipt of notification, ISDA will complete inspection of best management practices to ensure farm meets requirements
North Dakota[38]	• Inert waste landfill • Waste pile for composting grass and leaves • Scrap tire pile	• Small solid waste facilities that are operated in compliance with state solid waste rules	• Application filled out and sent in. • Notification serves as permit

[36] Nebraska Department of Environmental Quality, "Fact Sheets: Permit-by-Rule". http://www.deq.state.ne.us/Publica.nsf/pages/05-171. (Last viewed October 8, 2009).

[37] Idaho Department of Environmental Quality. "Air Quality". http://www.deq.state.id.us/air/permits_forms/permitting/pbr.cfm. (Last viewed October 8, 2009).

[38] North Dakota Department of Health, Division of Waste Management. "Permit-by-Rule Notification". http://www.ndhealth.gov/wm/Publications/PermitByRuleNotification.pdf. (Last viewed October 8, 2009).

STATE	SECTORS - EXAMPLES	APPLICABILITY (AS DESCRIBED BY STATE AGENCY)	CHARACTERISTICS/APPLICATION PROCESS
Tennessee[39]	• Solid waste processing facilities • Coal ash fill areas • Tire storage facilities	• Facilities that change the chemical or physical characteristics of a solid waste	• Application includes maps and work sheets regarding storage capacity, general information about the facility, and plans for how facility will comply with applicable criteria • After application is reviewed and approved, authorization letters are returned to applicants • Application process takes about 60 days • Authorization is valid as long as the maintenance fees are paid or until a significant modification is made
Michigan[40]	• Stormwater discharge from construction activities	• Construction activities that have land disturbance of one or more acres • There is a point source discharge of stormwater to waters of the state, either directly or through a separate storm sewer	• Automatic coverage under the permit-by-rule for sites that disturb one to five acres • Sites that disturb more than five acres must complete a Notice of Coverage form. The permit is designed to have the required coverage if the Notice of Coverage form is administratively complete

[39] Tennessee Department of Environment & Conservation, Department of Environment and Conservation Permits. "Solid Waste Management Permit by Rule". http://www.state.tn.us/environment/permits/permrule.shtml. (Last viewed October 8, 2009).

[40] Michigan Department of Environmental Quality. "Permit-by-Rule for Stormwater from Construction Activities". http://www.deq.state.mi.us/documents/deq-water-npdes-stormwater-Construction_Q&A.doc. (Last viewed October 8, 2009).

The definitions of general permits and permits-by-rule tend to vary by permitting authority, and the distinction between the two is often blurred. Moreover, these two permitting approaches are related to other permitting approaches such as standard permits and registration permits. Broadly speaking, all of these permitting approaches are designed to be more standardized, less flexible, and easier to implement than traditional site-specific permits because they require less information from individual entities applying for a permit or registration, and because the public comment process is streamlined. In contrast, site-specific permits are customized documents that require extensive and important documentation of facility equipment, emissions, and emissions controls. Site specific permit applications must be carefully reviewed by state permit writers, and are usually subject to a public review and comment process for each site-specific permit which can be time and/or resource intensive. However, site-specific permits ensure accurate and complete documentation of compliance and provide valuable information about the facilities in a sector. Site-specific permits also carry the expectation of inspections, whereas general permits and permits-by-rule generally do not. Area source facilities may not have the same expectation of inspection as major sources.

ENVIRONMENTAL RESULTS PROGRAM

ERP is an innovative approach to improving the environmental performance for sectors or groups of regulated entities characterized by large numbers of small, relatively similar facilities. ERP combines plain language compliance assistance that promotes pollution prevention; facility self-assessment and self-certification; agency inspections; and statistically based performance measurement. Where necessary, regulators also conduct a comprehensive facility inventory and targeted enforcement actions. These components are intended to work together to improve compliance and reduce environmental impacts of the target sector, while deploying government resources strategically and efficiently. ERP is an integrated approach that often addresses multiple environmental media, and combines efforts involving compliance assistance and measurement. Facilities receive a comprehensive package information from the state, such as a workbook describing regulatory requirements, best practice suggestions, and self-certification forms.

The steps involved in developing and implementing a typical ERP are described in Exhibit 2-4. Note that not all ERPs involve all of these steps, since states have adapted the various program components to suit their individual circumstances. The steps outlined below are generally combined in a cyclical process.

Specifically, for a full ERP, states:

- **Identify facilities in the target sector**: In this step, states identify the names and locations of all relevant facilities in the entire state (or focused area), to their best of their ability. This can be done a number of ways, including database searches, licensing record searches, or phone searches.[41]

- **Conduct inspections at a random sample of facilities at the outset of the program (i.e., baseline)**: Based on the number of facilities identified in the target sector, the state then determines the number of facilities that must be inspected to obtain a statistically valid random sample. Inspections are completed at this random sample of facilities, during which inspectors complete checklists that describe the extent to which each facility's performance adheres to both regulatory and beyond

[41] In addition, EPA lists inventories of facilities, including addresses, for some sectors on its Technology Transfer on the Air Toxics Web Site. However, the website cautions that the lists of facilities were compiled from existing data in July 2009, and they are not current or comprehensive. For more information, see: U.S. EPA, Technology Transfer Network, Air Toxics Web Site. "Facility Lists for Promulgated Area Source Standards." http://www.epa.gov/ttn/atw/area/facilities.html

compliance measures. These inspections results become the "baseline" against which later inspections results will be compared to measure sector progress.

- **Offer compliance assistance to all facilities**: There are several forms of compliance assistance that states can offer. Common examples include workbooks and workshops. These materials generally describe the regulatory requirements and beyond compliance practices, and serve as a basis for self-certification.

- **Encourage (or in some cases require) facilities to conduct a self-assessment and submit self-certification forms**: Facilities use the materials provided during the compliance assistance (e.g., workbooks) to assess the extent to which they are in compliance with their regulatory requirements, using the self-certification forms. Note that regardless of whether or not self-certification forms are required to be submitted, all facilities are required to be in compliance with applicable regulations.

- **Conduct a second round of random inspections**: Once the compliance assistance has been administered and the self-certification forms have been completed, the state will conduct a second round of random inspections, to again determine the extent to which each facility's performance adheres to both regulatory and beyond compliance measures.

- **Compare baseline inspections results to the second round of results**: The performance results of the baseline and second round of results are then compared to determine the performance changes of the sector as a whole.[42]

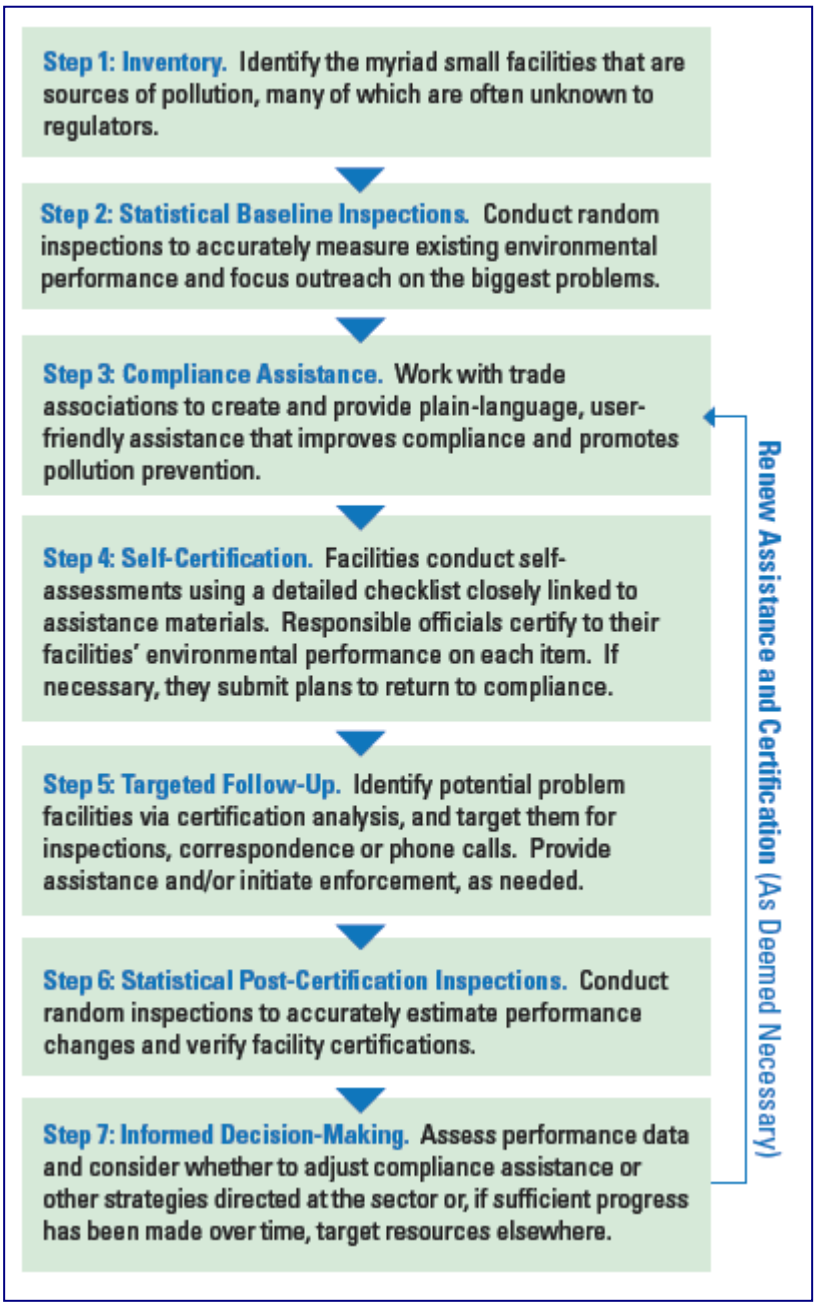
- **Utilize performance data to inform and improve the next round of compliance assistance**: States can use the results of this analysis to target resources toward sector issues or behaviors that are of particular concern. For example, if a certain set of indicators showed a decline or very little improvement in performance, more resources may be needed in that area.[43]

Programs that are informed by ERP but do not include all of the ERP components are sometimes called "ERP-like" programs. For example, a state may conduct workshops and disseminate self-certification forms, but not conduct random facility inspections. For the purpose of this document, these "ERP-like" programs are discussed in the next section as hybrid approaches.

[42] Conducting random inspections of a sample of facilities allows states to make inferences about the performance of the sector as a whole, for statistically significant findings, rather than having to inspect every facility in the sector.

[43] Information adapted from U.S. EPA's Innovative Environmental Permitting ERP page. http://www.epa.gov/erp/what.htm

EXHIBIT 2-4. A TYPICAL ERP CYCLE[44]



[44] U.S. EPA, ERP States Produce Results 2007 Report: States' Experience Implementing the Environmental Results Program, EPA 100-R-07-007, May 2007, http://www.epa.gov/erp/erp_states.pdf. (Last viewed October 2, 2008).

HYBRID APPROACHES

In addition to the three basic approaches discussed above a state may incorporate elements from these different approaches based on the state's specific resources and goals. For example, a state could incorporate a permit requirement into an ERP. South Carolina is creating a workbook (ERP) and combining that with a registration permit. Another state could choose to use a general permit or permit-by-rule, but add statistically based inspections borrowed from ERP to better measure sector performance and demonstrate progress. Exhibit 2-5 compares the basic components of each of the three approaches into eight basic categories: notification, compliance assistance, documentation of compliance, plans to achieve compliance, inspections, measurement, renewal, and targeted inspections/enforcement. By being aware of the full spectrum of available policy tools, states can more effectively tailor their choices to maximize their ability to meet their policy goals.

EXHIBIT 2-5: COMPARISON OF POLICY APPROACHES

	APPROACH		
FUNCTION	**GENERAL PERMITS**	**PERMITS-BY-RULE**	**ERP**
Alert facilities to program requirements	Extent of notification varies by state (e.g., during public comment period) Facility determines eligibility	Extent of notification varies by state (e.g., during public comment period) Facility determines eligibility	Facility Inventory Send out notification materials to each facility, including self-certification form and non-applicability form Facility determines eligibility
Offer compliance assistance	May be provided, but not an integral part of the permit	May be provided, but not an integral part of the permit	Notification materials include compliance assistance workbook Offer workshops
Obtain documentation of facility compliance	Facility completes application Regulator checks application Permit sent to facility	Receipt of application/notification serves as permit In some cases, verification of coverage under permit is sent to facility	Self-certification forms (voluntary or mandatory)
Obtain documentation of facility plans to achieve compliance	Generally none	None	Return to Compliance Plans
Enable on-site inspectors to determine whether facility is in compliance	Maintain records on –site	Maintain records on –site	Maintain records on –site
Measure changes in performance	None	None	Baseline and follow-up inspections (statistically based)
Renewal[1]	(In some cases) Renewal (e.g., annual, every 5 years)	Generally not included	Varies by program (further rounds)
Targeted Inspections/ Enforcement	As needed		

Note:
1) If the applicable rule changes, all three programs generally send notification, or change permitting/outreach materials as necessary.

OVERVIEW OF AUTO BODY AND BOILERS SECTORS AND APPLICABLE AREA SOURCE RULES

This section describes each of the sectors included in this report in turn, and provides an overview of the area source rules with which entities in these sectors will need to comply.

AUTO BODY SECTOR

Sector Description

Estimates of the number of auto body shops in the nation vary widely, from roughly 35,000 to 80,000.[45] Many of the shops affected by the rule are small businesses. Auto body shops are commonly found in residential neighborhoods, and they tend to be clustered in minority, immigrant, and low income communities. While many shops comply with accepted industry practices or current control technologies, others, particularly those that operate informally or out-of-doors, take minimal precautions to prevent pollution or protect worker health.[46]

Air emissions from auto body shops are primarily the result of painting and finishing operations. These operations can be broken down into six activities: 1) surface preparation (sanding, solvent wipe down), 2) paint storage, 3) paint mixing, 4) paint application (spraying), 5) drying, and 6) spray gun cleaning.[47] Pollutants of concern from auto body shops, and related health impacts, are shown in Exhibit 2-6.

[45] A study conducted for EPA in support of rule development found that the estimated number of auto body shops nationwide ranged from approximately 35,200 reported by the U.S. Census in 2002, to over 70,000 shops found in an online "yellow pages" listing. (Source: Eastern Research Group, Memorandum to EPA, "Estimating the number of automotive refinishing shops and the projected number of new shops," dated February 22, 2006, included as part of the Technical Support Document for Proposed Rule: National Emission Standards for Hazardous Air Pollutants Paint Stripping and Miscellaneous Surface Coating Operations at Area Sources, Docket ID EPA-HQ-OAR-2006-0306, Document ID EPA-HQ-OAR-2006-0306-0041.3. Available online at http://www.regulations.gov/fdmspublic/component/main?main=DocumentDetail&o=09000064804808ea. (Last viewed September 24, 2008.) EPA staff familiar with the auto body area source rule estimated that there are approximately 80,000 auto body shops nation-wide. (Source: Discussion at States ERP Consortium All Members Meeting August 26th – 28th, 2007).

[46] U.S. EPA Collision Repair Campaign. Available at: http://www.epa.gov/air/toxicair/community/collision.html. (Last viewed September 24, 2008).

[47] Adapted from: U.S. EPA Design for the Environment. A Self-Evaluation Checklist of Best Practices for Auto Refinish Shops and Schools. March 2008. Available at: http:www.epa.gov/dfe. EPA 744-F-07-006. (Last viewed September 24, 2008).

EXHIBIT 2-6. EMISSIONS AND HEALTH IMPACTS FROM AUTO BODY SHOPS

POLLUTANT	HEALTH CONCERN
Hazardous Air Pollutants (HAP), including Lead, Chromium and Cadmium	Neurotoxicity, lung cancer
Particulate Matter (PM)	Asthma, heart attacks, bronchitis, premature mortality
Volatile Organic Compounds (VOCs)	Asthma and bronchitis
Diisocyanates	Leading cause of occupational asthma; skin and lung sensitization
Solvents	Irritation, headache, nausea, liver, kidney, nervous system damage
Source: EPA Collision Repair Campaign, http://www.epa.gov/air/toxicair/ community/collision.html. (Last visited September 24, 2008).	

Area Source Rule

On January 9, 2008, EPA promulgated its final air toxics standards for area sources in three industry groups related to paint stripping and miscellaneous surface coating:

- Paint stripping operations that use methylene chloride (MeCl)-containing paint stripping formulations;
- Spray-applied finishing or refinishing of motor vehicles and mobile equipment (trucks, construction equipment, self-propelled vehicles, and equipment that may be driven on a roadway); and
- Surface coating operations that involve spray-applied coatings that contain metal air toxic compounds to miscellaneous parts and products made of metal, plastic, or a combination of metal and plastic.

Existing sources must comply with the rule by January 2011. The rule requires that each affected operation must implement management practices to minimize the evaporative toxic emissions of their facility, including properly training staff.[48] Specific requirements for auto body shops outlined in the rule are shown in Exhibit 2-7.

[48] Environmental Protection Agency, FR Vol. 73, No. 6, Wednesday, January 9, 2008. 40 CFR Part 63: National Emission Standards for Hazardous Air Pollutants: Paint Stripping and Miscellaneous Surface Coating Operations at Area Sources. Final Rule. http://www.epa.gov/ttn/atw/area/fr09ja08.pdf. (Last viewed September 24, 2008).

EXHIBIT 2-7. SUMMARY OF REQUIREMENTS FOR AUTO BODY SHOPS

1) All spray painting must be done in a spray booth.

   - Full cars must be painted in a spray booth with four walls, a roof and a ventilation system. (Filters in the booth have to remove at least 98% of the particulates.)
   - Parts of cars must be painted in a booth with at least three walls or flaps, a roof and a ventilation system that pulls air into the spray booth.
   - Spot repairs must be done in an enclosure which prevents any mist from getting out of the enclosure.

2) Painters must use spray guns and techniques which reduce overspray (such as high volume, low pressure, or HVLP, spray guns).

3) All painters must receive training. Owners must keep records of the training of each painter. (Specific training requirements are specified in the rule.)

4) Paint spray gun cleaning cannot create any mist of cleaning solvent to the air. Workers may spray solvent through the gun for cleaning purposes using an enclosed gun cleaner, or they may clean the gun manually.

5) All shops must also send a notification to EPA with some general information by January 2010:

   - Location of facility
   - Description of spray painting equipment
   - Confirmation that shop has necessary equipment and training.

6) Exemptions to the rule are facility maintenance activities, which include the application of coatings to stationary structures or their appurtenances at the site of installation, to portable buildings at the site of installation, and to pavements and curbs.

Source: Brief Summary New EPA regulations for Autobody Refinishing Shops, 40 CFR Part 63 Subpart HHHHHH, August 2008, online at http://www.epa.gov/ttn/atw/area/autobodybs.doc. (Last viewed: September 24, 2008).

INDUSTRIAL/COMMERCIAL/INSTITUTIONAL BOILER SECTOR

Sector Description

A boiler is an enclosed device that uses controlled flame to produce steam. The steam is then channeled to applications within a facility, such as manufacturing/process heating, space heating, and power generation.[49] Most boilers burn fossil fuels (typically natural gas and oil), while some use electricity.[50] In addition to the boiler itself, boiler systems also include piping and valves, operating and safety controls, water treatment systems, and pollution control devices.[51]

The area source boiler rule will apply to both industrial and commercial/institutional boilers:

- **Industrial boilers** are used in all major industrial sectors but primarily by the paper products, chemical, food, and petroleum industries. It is estimated that the heat input capacity for these boilers is typically between 10 and 250 MMBtu/hr.

- **Commercial/institutional boilers** are generally smaller than the industrial units, with heat input capacities generally below 10 MMBtu/hr. These units normally supply the steam and hot water for space heating establishments such as wholesale and retail trade, office buildings, hotels, restaurants, hospitals, schools, museums, government buildings, and airports.[52]

The primary HAPs that are generated through the combustion of fossil fuels and biomass in boilers and process heaters are: arsenic, beryllium, cadmium, lead, hydrochloric acid, and mercury. Boilers also emit non-HAP pollutants such as sulfur dioxide and particulate matter.[53]

Area Source Rule

An area source rule for industrial, commercial, and institutional boilers was required to fulfill the June 15, 2009 deadline set by a court order issued in March of 2006, but has been delayed until December 16, 2010.[54] While a rule for area source boilers has not yet been proposed, the Clean Air Act instructs EPA to "promulgate standards or requirements applicable to [area] sources… which provide for the use of generally available control technologies [GACT] or management practices by such sources to reduce emissions of hazardous air pollutants."[55] GACT are meant to encompass: "Methods, practices, and techniques which are commercially available and appropriate for application by the sources in the category considering economic impacts and the technical capabilities of the firms to operate and maintain the emissions control systems."[56] For area source boilers, GACT generally includes work practice standards such as good combustion controls, energy audits, and the installation of energy efficient

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[49] U.S. EPA. Regulatory Impact Analysis for the Industrial Boilers and Process Heaters NESHAP, Final Report. February 2004. EPA-452/R-04-002.

[50] Boiler Systems. Plant Engineering, Vol. 45, No. 14. July 18, 1991, p. 92.

[51] Ibid.

[52] U.S. EPA. Regulatory Impact Analysis for the Industrial Boilers and Process Heaters NESHAP, Final Report. February 2004. EPA-452/R-04-002.

[53] Ibid.

[54] http://www.epa.gov/ttn/atw/area/arearules.html (Last viewed October 2, 2009).

[55] Clean Air Act. Section 112(d)(5).

[56] Senate Report No. 101-228, 101st Congress, 1st Session.

boilers.[57] An estimated 173,000 boilers will be affected by the upcoming area source rule.[58] Many of these boilers are small (less than 10 MMBTU/hr), and therefore have not previously been subject to regulation.[59]

SUMMARY OF CURRENT STATE APPROACHES FOR ADDRESSING AUTO BODY SHOPS AND BOILERS

Several states are employing the four permitting/compliance monitoring approaches (general permits, permits-by-rule, ERPs, and hybrid approaches). We have not conducted a comprehensive search to identify *all* states using these permitting/compliance monitoring approaches, and therefore there may be many additional examples. Exhibit 2-8 identifies a selection of states that are using the four different permitting/compliance monitoring approaches described in this study to regulate or manage auto body shops.

[57] Trinity Consultants. Boiler MACT Update. Available at: http://trinityconsultants.com/State_Regulatory?News.asp?st=OR. . (Last viewed September 24, 2008).

[58] Phone conversation with Jim Eddinger, U.S. EPA on November 10, 2009. This estimate covers all industrial, commercial and institutional boilers that are run using coal, biomass, or oil fuel. It does not include gas-run boilers (an estimated 1.3 million boilers).

[59] Ibid.

EXHIBIT 2-8. EXAMPLES OF EXISTING STATE APPROACHES TO REDUCING POLLUTION FROM THE AUTO BODY SECTOR

PERMITTING/ POLICY APPROACH	STATE(S)	EXAMPLE PROGRAM DESCRIPTION
General Permits	MD	Developed a general air permit to construct for auto body shops. Permit includes standard requirements for auto refinishing operations and a brief summary of pollution prevention tips for auto refinishers. [60]
	WA	General air permit for the construction and operation of new and modified auto body shops. Must submit application and State Environmental Policy Act checklist.[61]
	IN	Developed a "source specific operating permit" for auto body shop air emissions under a certain level (varies by pollutant).[62]
Permits-by-Rule	TX	Permit-by-Rule for auto body refinishing facilities which addresses air emissions. [63]
	OH	Permit-by-Rule for auto body refinishing facilities that serves as a permit exemption (for construction and operation permits).[64]
	IA	Permit-By-Rule for spray booth operators, including automotive. Must meet requirements laid out in Iowa administrative code and certify compliance with NESHAPS.[65]
	MN	Have "simplified" permits called registration permits for auto body shops that use a certain amount of VOC-containing paints and solvents.[66]
Environmental Results Program	DE, MD, ME, NY, RI, WA	These states have developed, or are in the process of developing ERPs to address the auto body repair sector. All of these programs address multiple environmental media, not just air emissions. [67]

[60] Maryland Department of the Environment, Air Quality General Permit to Construct Vehicle Refinishing (Autobody), available online at http://www.mde.state.md.us/assets/document/00%20Autobody%20Package(1).pdf. (Last viewed September 24, 2009).

[61] Washington State Governor's Office of Regulatory Assistance. "General Order of Approval for Auto Body Shops". http://apps.ecy.wa.gov/permithandbook/permitdetail.asp?id=129

[62] Indiana Department of Environmental Management. "Guide for Citizen Participation, Chapter 6: What is a Permit?" http://www.ai.org/idem/6066.htm. Also, Indiana Department of Environmental Management. "Indiana's Collision Repair and Automotive Refinishing Shops Compliance Manual". http://www.ai.org/idem/files/ctap_collision_manual.pdf

[63] See http://www.tceq.state.tx.us/permitting/air/permitbyrule/pbr_index.html. (Last viewed September 24, 2009).

[64] Ohio Office of Compliance Assistance and Pollution Prevention. "Permit-by-Rule User's Guide for Auto Body Refinishing". http://www.epa.ohio.gov/portals/41/sb/publications/AutobodyPBRGuide.pdf

[65] Iowa Department of Natural Resources, Air Quality Bureau. "Notification Letter for Permit by Rule for Spray Booths". http://www.iowadnr.gov/air/prof/const/files/PBR-Form.pdf

[66] Minnesota Pollution Control Agency. "Air Quality Rules Affecting Autobody Shops with Paint Spraying Equipment". http://www.pca.state.mn.us/publications/aq5-13.pdf

[67] ERP States Consortium, ERP Sectors, http://www.erpstates.org/ERPsectors.aspx (Last viewed September 24, 2008). Note that while Virginia is listed as having an auto body ERP, an interview conducted during the course of this project revealed that the program has been shut down. Conversely, an auto body ERP is under development in South Carolina, but this is not yet reflected on the ERP States Consortium Website.

PERMITTING/ POLICY APPROACH	STATE(S)	EXAMPLE PROGRAM DESCRIPTION
Hybrid Approaches	NH, NY, ME, RI, VT, WA[68]	Common Measures Project: These states have been employing varying degrees of compliance assistance and were involved in an effort to develop shared performance indicators for auto body shop performance using statistically based before- and after- inspections, similar to those used in ERP.
	SC	Developing an ERP-like approach, combined with a registration permit.
	CO	ERP-like certification and performance measurement for hazardous waste requirements.

Several states are using the different permitting/compliance monitoring approaches in the boiler sector as well. We have not conducted a comprehensive search to identify *all* states using these permitting/compliance monitoring approaches, and therefore there may be many additional examples. Exhibit 2-9 identifies a selection of states that are using three of the four different permitting/compliance monitoring approaches described in this study to regulate or manage boilers.

[68] According to the States Common Measures Project Final Report, June 18, 2009. Available at: http://www.newmoa.org/hazardouswaste/measures/report.cfm.

EXHIBIT 2-9. EXISTING STATE APPROACHES TO REDUCING POLLUTION FROM THE BOILERS SECTOR[69]

PERMITTING/ POLICY APPROACH	STATE(S)	EXAMPLE PROGRAM DESCRIPTION
General Permits	AZ	Developed a general permit to operate for boilers. Permit includes emissions calculations and equipment information. Facilities are required to annually submit emissions inventory questionnaires and compliance certification form.[70]
	MI	Issued a general permit to install for boilers. Permit application includes certification of emissions limits and equipment information, and must be filed before the boiler is installed or operated. State agency reviews application and permit is mailed to the facility.[71]
	NJ	Has a registration-like process for its general permit for boilers; facilities submit application, and can begin operations as soon as the registration form is received by the agency.[72]
	FL, MD, MN, NM, OR, PA, TX, WA, WI	Developed general permits for boilers.
Permits-by-Rule	GA, KS	Promulgated permits-by-rule for the boiler sector.
Hybrid Approach	MA	Developed an ERP-like program (including compliance assistance and self-certification (which replaces a permit), but not statistical measurement).[73]

[69] Air Permit Program Implementation: A Roadmap for Innovation Final Briefing Paper, Prepared for EPA OPEI/OPAR/OAQPS Partners, April 17, 2006

[70] Arizona Department of Environmental Quality. Publications and Forms: Application Forms and Guidance: Air Quality. http://www.azdeq.gov/function/forms/appsair.html#source. (Last viewed October 9, 2009).

[71] Michigan Department of Environmental Quality. Michigan Air Permits System New Source Review General Permits. "General Permit to Install". http://www.deq.state.mi.us/aps/downloads/permits/GenPmt/General%20Permit%20Program%2001-06.pdf. (Last viewed October 8, 2009).

[72] New Jersey Department of Environmental Protection, Air Quality permitting Program. http://www.nj.gov/dep/aqpp/gp.html. Also, "General Procedures for General Permits." http://www.nj.gov/dep/aqpp/downloads/general/General%20Procedures.pdf. (Last viewed October 9, 2009).

[73] Massachusetts Department of Environmental Protection. "Boiler Environmental Certification Workbook: For use with MassDEP's Environmental Results Program". http://www.mass.gov/dep/service/online/boilwbk.pdf

CHAPTER 3 | FINDINGS

This chapter summarizes the results of seven interviews with staff of regulatory agencies in six states that address the auto body and boilers sectors through general permits, permits-by-rule, ERP, and hybrid approaches. The interviews were conducted in May, June, and July 2008, with some follow-up conversations in September 2009, and were informal discussions oriented around a common set of questions, included in Appendix B. Programs addressed include the following, organized by permitting/compliance monitoring approach:

General Permit Program

- Arizona's Boilers General Permit

Permit-by-Rule Programs

- Texas' Auto Body Permit-by-Rule
- Texas' Boilers Permit-by-Rule

ERP

- Rhode Island's Auto Body ERP

Hybrid Approaches

- South Carolina's Auto Body program
- Massachusetts' Boilers program

The findings for each program are organized within three overarching topics:

- Program characteristics and history;
- Factors that motivated each state to develop the program; and
- Program advantages and disadvantages.

GENERAL PERMIT PROGRAM

ARIZONA'S BOILERS GENERAL PERMIT[74]

Program Characteristics and History

Historically, the Arizona Department of Environmental Quality (ADEQ) used separate site-specific permits to regulate air emissions for construction and operation of all types of regulated facilities. In

[74] Findings are based on a phone interview with Trevor Baggiore, Air Permits Section Manager within the Arizona Department of Environmental Quality, July 23, 2008.

1993, the Department combined the construction and operating permits into one single site-specific permit. However, ADEQ found that site-specific permits were not cost effective for certain sectors with a number of similar facilities; therefore the Department began issuing general permits for these sectors. In Arizona, a general permit is a pre-approved permit and certificate that covers a specific class of sources. By issuing a general permit, ADEQ indicates that it approves the activities authorized by the general permit, provided that the owner or operator of the source registers with the Department and meets the requirements of the general permit. Since the general permit is written to cover sources that are similar, the state must go through public notice and public hearing only once. Each source that is covered by the general permit will not be required to go through its own public notice and public hearing. However, a list of sources covered under the general permit will be published periodically. Compared to site-specific permits, general permits are usually less expensive and require less time to process, but they are also less flexible, since facilities must meet the terms specified in the general permit.[75]

ADEQ developed its first general permit in 1995 for crushing and screening plants. Over the next several years, the Department developed general permits for other sectors including crematories, soil vapor extraction units, hot asphalt plants, dry cleaners, generators, concrete batch plants, and boilers.

Once a general permit has been developed, sources may apply for coverage under the general permit instead of obtaining individual permits. The application has a checklist that guides the applicant through the permit requirements. The permit fee is $500. The regulator checks the emissions calculations and equipment information submitted. If the requirements of the general permit are met, ADEQ issues an Authorization to Operate (ATO) for each major piece of equipment covered under the permit. This process generally takes a few weeks to complete. The ATO allows for easy tracking of permitted equipment and assists inspectors in verifying coverage when conducting inspections.

Facilities with an ATO must make their sites available for inspections by state regulators. Inspections are conducted on a rotating basis, and usually occur within a two-year period. General permits are valid for five years, and within that time period, companies must annually submit:

1. An emissions inventory questionnaire, due by March 31st, which includes emissions information from the previous calendar year. ADEQ staff have meetings with facilities to help them prepare their emissions inventories.

2. A compliance certification form, which describes the compliance status of the source with respect to each General Permit condition and the methods used for determining the compliance status. The certification also includes descriptions of any permit deviations.

In addition, the facility must keep all required monitoring information on site.[76]

ADEQ staff use the information submitted to cross check compliance certifications with emissions inventories, to be sure that facilities are in compliance.

Factors that Motivated Arizona to Develop its Program

In developing general permits, the Department was seeking to reduce permitting costs for regulated facilities, while at the same time develop a more efficient process for regulators.

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[75] This paragraph is largely drawn from the ADEQ website, "Permits: Permits Classifications – General Permits." Available at: http://azdeq.gov/environ/air/permits/class.html#perm. (Last viewed September 24, 2008).

[76] ADEQ, "General Air Quality Control Permit for Boilers", May 1, 2008.

In selecting the sectors for which it would develop general permits, ADEQ looked for sectors with similar types of equipment that are subject to similar federal requirements. Arizona's general permit rule stipulates that a sector must have at least 10 operational sources to write a general permit. Therefore, regulators also looked for sectors that would have the most comprehensive coverage with a general permit. Currently, there are 15 boiler facilities holding state general permits, all with a maximum firing capacity of 100 MMBUT/hr or less.[77] Many additional boilers of this size in three relatively urban counties fall under local jurisdictions, and are regulated separately from the state general permit.[78]

ADEQ chose to limit boiler capacity to 100 MMBTU/hr because this limit corresponds to the federal New Source Performance Standards (NSPS) for Small Industrial-Commercial-Institutional Steam Generating Units. Facilities above the NSPS limit would have to get site-specific permits to meet federal requirements. Note the NSPS standards cover boilers with a capacity between 10 MMBTU/hr and 100 MMBTU/hr, while the Arizona standards cover all boilers below 100 MMBUT/hr.[79,80]

ADEQ did not use risk of environmental and health impacts as a key consideration in selecting the sectors for which it would write general permits. Instead, the Department took steps to minimize environmental and health risks into account when designing the permit conditions.

ADEQ does anticipate taking delegation of the upcoming federal area source rules, and the Department will adjust its general permits to comply with the federal standards.

Program Advantages and Disadvantages

The general permit program offers ADEQ an approach for permitting multiple sources with far fewer resources for both the Department and regulated entities, compared to site-specific permits. From the Department's perspective, it requires using less than one full-time ADEQ employee to process and manage all boiler general permits. From the perspective of a regulated entity, general permits require a flat fee of $500, compared to individual permits that cost $133.50 per hour to prepare, usually totaling thousands of dollars.

In addition, the general permit process creates an inventory of covered equipment at each facility, which makes it easier for the inspectors to verify coverage while conducting inspections. Requiring facilities to report emissions and submit self-certification forms allows ADEQ to provide some monitoring of facilities under the general permit in addition to periodic inspections. On the other hand, ADEQ has not devoted resources to discovering facilities that may be subject to the general permit, but that have not registered.

One challenge associated with developing a general permit is that to reap the cost savings and efficiency benefits of a general permit, the Department must impose fairly restrictive permit conditions. For example, in the hot mix asphalt and crushing and screening sectors, ADEQ tried to write the general permit to allow more flexibility in terms of combining equipment from different sources, and allowing

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[77] ADEQ, "General Air Quality Control Permit for Boilers", May 1, 2008. Attachment B: Specific Conditions, Section II.A.1.

[78] The three counties are Maricopa county, surrounding Phoenix; Pima county, surrounding Tucson; and Penal county between the two cities. Maricopa County is in a non-attainment area, and does not use a general permit.

[79] 40 CFR Part 60 - Subpart Dc

[80] ADEQ General Permit Application Packet for Boiler(s), Available online at http://azdeq.gov/environ/air/permits/download/gnblrapp.pdf. (Last viewed September 30, 2008).

facilities to use site-specific data that informs emissions limits in the permit. However, this more flexible approach is difficult to implement, and it makes it harder for ADEQ to determine whether or not a facility is in compliance. In the boilers sector, where equipment is fairly standard, the general permit has been more effective. However, in cases where facilities do not meet general permit conditions, they must apply for a site-specific permit. For example, a few boiler facilities have had trouble meeting stack height or operating hours requirements in the boilers general permit; these facilities must instead apply for a site-specific permit. Hospitals have had particular trouble meeting the general permit requirements for horse power limits on internal combustion engines on site, as well as ethylene oxide sterilizers that are not covered under the general permit. In the case of the sterilizers, hospitals were not aware that this equipment was causing them to be out of compliance with the general permit terms; ADEQ only discovered the equipment as part of on-site inspections. ADEQ addressed both concerns for hospitals when it updated its boilers permit in June, 2009. The general permit for boilers did not change; however, to address the issues with hospitals, ADEQ is establishing a new general permit specifically for hospitals that would cover their boilers and their ethylene oxide sterilizers.[81]

PERMIT-BY-RULE PROGRAMS

TEXAS' AUTO BODY PERMIT-BY-RULE[82]

Program Characteristics and History

Before building any facility that will emit air pollutants, or modifying an existing one, the Texas Administrative Code requires the facility owner to either: 1) obtain a construction authorization, or 2) ensure that the facility will meet the state's criteria for a *de minimus* source of pollution. The state has a tiered system for construction authorizations, whereby more complicated facilities with higher emissions receive a site-specific state permit, and facilities of somewhat less complexity that still require prescriptive permit requirements are eligible for a standard permit or permit-by-rule. Of these, permits-by-rule are reserved for facilities with "insignificant" emissions that should not trigger Prevention of Significant Deterioration (PSD) or Non-attainment (NA) requirements and are thought to pose little risk to health and the environment.[83]

The Texas Commission on Environmental Quality (TCEQ) has developed permits-by-rule for approximately 120 source types, including the auto body sector permit-by-rule, which was promulgated in 1994. In addition to authorizing construction, the permit-by-rule also serves as an operating permit. The permit-by-rule generally promotes the use of reasonably available control technology (RACT), and requires process controls and limits on VOC content in coatings used.[84] Specifically, auto body repair and refinishing shops are required to meet the following conditions to qualify for a permit-by-rule:

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[81] Conversation with Trevor Baggiore, Air Quality Permits Section Manager for Arizona Department of Environmental Quality, September 29, 2009.

[82] Findings are based on an interview with Mike Coldiron and Molly Wentworth, who work in the air permits and rule registration sections of the Texas Commission on Environmental Quality, June, 2008.

[83] Permits-by-rule are suitable for facilities that produce emissions above the *de minimus* threshold, but have emissions of less than 250 Tons per Year (TPY) of NO_X and CO, and less than 25 TPY of SO_2, PM_{10}, VOC, or any other air contaminant.

[84] TCEQ wrote the PBR to include RACT because these are the standards required in non-attainment areas; therefore, by requiring RACT for auto body shops across the state, TCEQ removed incentives for auto body shops to move locations so as to benefit from less stringent emissions standards in attainment areas.

1. Facility applies for its authorization before construction.

2. Good housekeeping is practiced: spills are cleaned promptly, equipment is maintained and clean, and waste is properly disposed of.

3. There are no visible emissions leaving the property.

4. All spray coating applications are performed in a totally enclosed, filtered spray booth except for sources that use less than two gallons per week or use less than one-half pint of coatings per hour.

5. The paint booth or area has adequate ventilation of spraying exhaust air.

6. High transfer efficiency coating application equipment is used (such as HVLP spray guns).

7. Cleanup emissions are minimized.

8. All required reports and records are maintained at the shop site for a consecutive 24-month period.[85]

In addition, facilities must submit:

1. Demonstration of compliance with the general conditions for a permit-by-rule;[86]

2. Demonstration of compliance with the specific conditions of the permit-by-rule; and

3. Administrative forms and registration fees.

Before the facility is allowed to operate, TCEQ reviews the submitted information to ensure it is complete. The Commission then completes a technical review of the emissions calculations and the description of the facility's operations to ensure compliance with state and federal requirements. Then TCEQ sends the facility a letter indicating that its file is either: complete and accepted, that more information is needed, or that the facility will need to file for a site-specific permit. Once the facility is operational, the Office of Compliance and Enforcement may inspect the facility to determine if the conditions of the permit-by-rule are being met properly, and to take enforcement actions if necessary. However, inspections usually occur only when there is a problem on site (e.g., a neighbor complaint about odor). There is no requirement for permit-by-rule renewal since the authorization is good for the life of the facility. If the facility changes its operation the auto body shop may need to submit an update of its information.

TCEQ also provides assistance to auto body shops: in some cases the Air Permits Division can provide help over the phone; in other cases the Small Business and Environmental Assistance (SBEA) Division may provide assistance by phone, in person or on site. The (SBEA) also conducts outreach to existing facilities to alert them to new requirements, such as sending out a letter to known facilities to inform them about the new federal area source rule for auto body shops.

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[85] Texas Administrative Code, Chapter 106, Subchapter S, §106.436.

[86] For a detailed description of the general conditions of the PBR, see TCEQ Permit by Rule Applicability Checklist Title 30 Texas Administrative Code § 106.4.

Factors that Motivated Texas to Develop its Program

Prior to the development of its auto body permit-by-rule, TCEQ relied on the general painting permit-by-rule already in existence to regulate the auto body sector. However, the general painting permit-by-rule did not easily translate to the auto body sector, and auto body shops themselves were dissatisfied with the requirements of the general painting permit-by-rule. More tailored requirements were needed to better fit the operations of the auto body shops. For example, regulators wanted to require shops to use the HVLP spray guns, spray booths, and compliant coatings. The general painting permit-by-rule did not address these issues specific to auto body shops. TCEQ did attempt to use a case-by-case permit approach for these shops. However, the paint booth vendors were often tasked by the shops to obtain a permit. The Commission found that the vendors did not have enough information about individual shop operations in order to enable permitting.

TCEQ estimates that there are about 5,000 auto body shops in Texas, making it impractical to permit on a case-by-case basis. By developing standardized requirements in a permit-by-rule for the entire sector, it saves the Commission time when reviewing individual shops' operations. Permit writers can review an application and complete the registration package in as little as half a day, and the entire permit-by-rule review process is generally completed in one month (as compared to nine months for a site-specific permit). The permit-by-rule program allows TCEQ to reach the entire spectrum of auto body shops in the state. It represents the minimum technical requirements, and TCEQ intends for a majority of shops to be able to meet the permit-by-rule standards. For those sources that cannot meet the requirements of a permit-by-rule then a site-specific construction permit should be obtained.

Program Advantages and Disadvantages

The permit-by-rule program addresses all levels of shops, from smaller, less sophisticated shops to larger shops with their own environmental officers. The rule is written so that smaller shops can easily apply, resulting in a higher likelihood of compliance. For example, shops are not required to measure their air emissions; instead, compliance is based on coating consumption limits. In addition, the auto body permit-by-rule is written to reflect general good operating practices that have business as well as environmental benefits. For example, when shops use HVLP spray guns as required in the permit-by-rule, they use less paint, have less mess, and their equipment lasts longer. However, because the permit-by-rule is written so that essentially all of the auto body shops in the state qualify, the state must spend a disproportionate amount of time assisting the smaller shops.

TCEQ hears from associations and individual shop owners that the permit-by-rule has changed shops' behaviors. Prior to implementation of the permit-by-rule, most shops used conventional or atomized spray guns, but HVLP spray guns are now standard at most shops. TCEQ attributes the more widespread use of HVLP guns to the permit-by-rule. In addition, at the same time that TCEQ put the permit-by-rule in place for auto body shops, the Commission also amended the state's regulations of VOC emissions. The permit-by-rule forced shops to use coatings compliant with the new standards (although these standards were not difficult to meet). Finally, the permit-by-rule required shops to use spray booths (except for panel repair and for very small shops that paint infrequently). While some shops were using spray booths before the rule (particularly well-run, larger operations), the permit-by-rule forced nearly all operations to use spray booths. TCEQ does not have a quantitative way to measure changes in performance; impressions about behavior changes are based on anecdotal information.

In developing the rule, TCEQ did a limited amount of emissions modeling to determine how health and environmental conditions around the shop could be affected by shop practices. By requiring shops to paint in a spray booth and have a stack that disperses emissions, the permit-by-rule minimizes environmental and health risks to neighbors.[87] TCEQ has found that overspray and odor complaints, which were common before implementation of the permit-by-rule, no longer occur.

The process of developing the permit-by-rule required about a year and a half, from inception of the rulemaking until the permit-by-rule was in place. TCEQ coordinated with industry as it developed the rule, and held several stakeholder meetings. Four to five TCEQ staff were directly involved in the rule writing process, although this was only one of many projects they were working on at that time. Now that the rule has been developed, approximately one full time equivalent (FTE) staff person is required to process auto body registrations for the permit-by-rule; additional staff time is required from the Small Business and Environmental Assistance group to conduct outreach to auto body shops.

TCEQ believes the permit-by-rule is much more cost effective for auto body shops than site-specific permits. Application fees for permits-by-rule are small ($100 or $450) compared to site-specific construction permits (where costs generally range from $10,000 to $30,000 including costs for consultants to prepare the permit application).

TCEQ is confident that it has reached most auto body shops and gotten them to apply for the permit-by-rule. Vendors tell new shops that they have to register for the permit, and trade associations and industry networks also spread the word about the requirements. Local governments (city officials and local fire departments) are also aware of the permitting requirements, and in fact some cities will not turn on a shop's electricity until they have a permit in place. The SBEA Division also uses state databases, organized by SIC codes, to identify and reach out to shops.

The permit-by-rule is expected to fit well with the new federal area source rule, as it is already written in to the permit-by-rule rules (30 TAC 106.4(a)(6)) that shops must comply with any federal regulations. However, the state will need to adjust its technical standards to comply with the federal rule. A formal rule making procedure would need to be followed to adjust any technical standards (e.g., filter efficiency or requiring all coatings to be applied in filtered enclosures). Due to the procedural requirements of this process, the rule revision may take one year or more.

TEXAS' BOILERS PERMIT-BY-RULE[88]

Program Characteristics and History

As noted earlier, Texas has an extensive and well-established permit-by-rule program, which stems from the state's requirement that all facilities that emit air pollutant have a permit. In the industrial/ commercial/institutional boilers sector, TCEQ uses permits-by-rule to authorize construction for small boilers that operate with a maximum heat input of 40 MMBTU/hr, while standard permits are used for larger boilers.[89] In the past, TCEQ had a lower heat input limit for boilers in the permit-by-rule program

[87] Note, the PBR does not address worker health concerns, since this is out of TCEQ's jurisdiction.

[88] Findings are based on a phone interview with James Linville, Sean O'Brien, and Molly Wentworth, who work in the air permits and rule registration sections of TCEQ, June, 2008.

[89] In contrast to the PBR, the standard permit has more prescriptive requirements, including testing requirements, emission limits, and substantial monitoring. There is also a detailed record-keeping requirement, and permit renewal every ten years. Standard permits require the use of the best available control technology (BACT) at the time the permit is developed.

(10 MMBTU/hr), but use of lower sulfur fuel oil eased concerns about emissions from boilers, and so the Commission decided to offer more flexibility by raising the heat input limit. The permit-by-rule does restrict NO_X emissions for boilers that have a heat input of more than 10 MMBTU/hr.

Facilities do not have to submit an application or registration for the permit-by-rule. As long as facilities purchase boilers that are in compliance, it is a straightforward matter for them to operate the boilers in compliance with the permit-by-rule. The boilers permit-by-rule does not require registration or payment of a fee; however facilities are required to maintain records on site showing that the facility is eligible for and in compliance with the permit-by-rule, as well as records of hours of fuel oil firing and amounts of fuel oil purchased.[90] TCEQ does not require facilities to register for the permit-by-rule because in the agency's judgment boilers pose little risk, and it is unlikely that a facility will operate a boiler improperly.[91] In TCEQ's view, the worst environmental impacts would only come about if facilities used very old boiler equipment; the Commission believes that by having the permit-by-rule in place, facilities will be compelled to update their equipment over time in line with the permit standards.

TCEQ does not track boilers' permits-by-rule or require permit renewals. However, the Office of Compliance and Enforcement does go out and inspect facilities that have boilers, usually if there is a complaint about the site (odor or dust), or if enforcement staff are there to conduct inspections for another program. In addition, TCEQ's SBEA group provides outreach to facilities to inform them of permit-by-rule requirements.

Factors that Motivated Texas to Develop its Program

Texas' Clean Air Act requires the TCEQ permit every facility in Texas that emits air toxics above a *de minimus* level. Given the substantial number of qualifying facilities and limited staffing resources, TCEQ felt it was unrealistic for state regulators to write individual permits for all the boilers in Texas. Texas' permit-by-rule program eliminates the need to conduct case by case reviews of each facility, significantly reducing workload for both regulators and facilities. Overall, TCEQ considers small boilers subject to the permit-by-rule part of the "noise level" for the state's overall emissions inventory; therefore, it is not cost-effective to devote substantial resources trying to reduce emissions from small boilers.

The permits-by-rule are intended to be simple for both regulators and regulated facilities, and relatively few resources are required to implement the permit-by-rule for boilers. While TCEQ expended significant resources to develop the program initially, it now takes less than one full-time employee at TCEQ to maintain the program. TCEQ does not have an exact estimate of the amount of time it took to develop the boilers permit-by-rule initially; however, if the state does have an estimate of what resources were required to develop a permit-by-rule for tanks: between three and four FTEs working for 18 months, plus more than $100,000 in consultant costs to research the current status of the industry, which was needed to develop the rule. These costs might be similar to what it would take to develop a permit-by-rule for a new sector entirely. However, if TCEQ were to simply update the boilers permit-by-rule, it would be a much less resource intensive project, since TCEQ is already well acquainted with current boilers equipment and technology, and would not need to conduct additional industry research. In this case, TCEQ would simply propose a rule and ask for boilers operators to review or comment on it.

[90] TCEQ, Chapter 106, Subchapter A, §106.8

[91] The Department of Licensing and Registration operates a boiler safety program that covers health and safety at the facilities.

Program Advantages and Disadvantages

In writing the permit-by-rule, TCEQ has tried to strike a careful balance between forcing technology that will reduce emissions, but not pushing too hard for emissions reductions that will be impractical to achieve. Once manufacturers know what the permits require, they build equipment to meet that standard. Manufacturers have developed burners that operate with reduced NO_X emissions; without the standards these manufacturers might have trouble selling this more efficient equipment. TCEQ did consider developing a manufacturers' standard instead of a permit-by-rule for boiler facilities; however the state had tried this approach for regulating water heater emissions with only mixed success. Overall, TCEQ felt that boilers are used in too many varied circumstances to make it possible to write effective standards for manufacturers to meet.

TCEQ strives to update permits-by-rule from time to time to require more efficient technology as it becomes available in the marketplace. However, the boilers permit has not been updated in some time, and has standards for NOx emissions that are considerably higher than what can be achieved by boiler equipment on the market today. One reason that TCEQ has not updated the boilers permit-by-rule in recent years is because there have not been complaints about it and the permit-by-rule seems to be working well. In addition, TCEQ has found it somewhat difficult to update the permit-by-rule because of the specificity of the rule language (e.g., detailed definitions are included in the rule itself). Permit-by-rule updates need to go through a rulemaking process, which requires public notice and comment. In addition, it can be difficult to engage the small businesses likely to be affected by rule changes and get their feedback, since they do not closely follow the regulatory process or development of rules that may affect them in the future.

If the permit-by-rule were to be updated, TCEQ would most likely require Reasonably Available Control Technology (RACT), but probably would not require a higher standard of Best Available Control Technology (BACT). In part this is because TCEQ feels that in areas of the state that need more restrictive requirements (i.e., non-attainment areas), local regulations will require additional control technologies needed to reduce NOx and VOC emissions in line with the State Implementation Plan. Note that even when the permit-by-rule is updated, newer standards will not affect facilities that are already permitted, since renewals and upgrades are not required as part of the permit-by-rule. This means that even when the permit-by-rule for boilers is updated, there will be many existing facilities operating with outdated equipment, and the shift to new equipment will happen gradually over time, as facilities need to replace their boilers.

It should also be noted that TCEQ does not track emissions reductions associated with the permit-by-rule. The Commission could quantify emissions for boilers at larger sites, but in TCEQ's judgment it is not worthwhile to try to quantify emissions from smaller sources. Because the program does not estimate emissions reductions associated with the permit-by-rule, it is difficult to quantify the program's outcomes or cost effectiveness.

ERP PROGRAMS

RHODE ISLAND'S AUTO BODY ERP[92]

Program Characteristics and History

Rhode Island was the first state to establish an ERP for the auto body sector. The program grew out of the state's history of working on sector-specific approaches to pollution prevention. In the 1990s, based on its pollution prevention work in other sectors, RI Department of Environmental Management (DEM) identified the auto body sector as a source of potential environmental and health concerns. The Department applied for EPA Region 1 grants to work with the sector. Working with the University of Rhode Island, local vocational schools, the state Department of Health, and the auto body industry, RI DEM conducted detailed surveys on pollution prevention, environmental controls, and occupational health and safety practices at auto body shops in the state. These efforts confirmed significant pollution and health concerns arising from auto body operations. RI DEM also found that literature and information on pollution prevention opportunities in the auto body sector were sparse. What little information was available focused solely on spray painting and isocyanates, but did not address the risks of auto body sanding. Sanding is a concern because it produces dust containing toxic metals, such as lead, arsenic, cadmium and chromium, which can cause adverse health effects.

In 1994, the RI DEM Office of Air Resources promulgated regulations targeting air emissions from auto body shops. In particular, these regulations established requirements for low VOC coatings, High Volume Low Pressure (HVLP) spray guns, and enclosed spray gun cleaners or equivalent technology.[93] RI DEM also set limits for methylene chloride emissions of 1,000 pounds per year.[94] While the Department was able to develop these regulations, it did not have the inspection resources available to fully enforce them. Inspectors were reaching less than five percent of auto body shops in the state each year. While inspectors were able to address complaints from shop neighbors, it seemed unlikely the Department could significantly increase its inspection coverage. RI DEM considered developing a permitting requirement for auto body shops as a way of enforcing the new air regulations, but the Department viewed this approach as too resource intensive.

At that time, RI DEM became aware of the ERP approach, and decided to use this model as a way to bring auto body shops in RI into compliance with state regulations for air emissions, as well as federal regulations that address hazardous waste, wastewater, and worker health and safety. RI DEM found that its early air regulations and associated outreach and inspection efforts at auto body shops actually led to high levels of compliance with air requirements, other issues such as hazardous waste, wastewater (UIC), and worker health and safety presented ongoing concerns at auto body shops. OSHA had not focused its attention on reducing worker risks at RI auto body shops, and so RI DEM perceived that ERP could play an important role in improving worker safety practices.

RI DEM created a program with the full complement of standard ERP elements: compliance assistance workshops and workbooks, self-certification, and statistically based inspections to measure performance. The Department established its ERP as a voluntary program, in other words, auto body shops could

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[92] Findings are based on a phone interview with Rich Enander and email correspondence with Ron Gagnon, both of whom work for RI DEM, May 14, 2008.

[93] See RI Air Pollution Control Regulation No. 30 "Control of Volatile Organic Compounds from Automotive Refinishing Operations."

[94] See RI Air Pollution Control Regulation No. 22 "Air Toxics." RI DEM staff note that RI's limit for methylene chloride is half the limit of the federal NESHAP, which caps emissions at 1 ton per year.

choose whether or not to participate in compliance assistance opportunities and self-certification; however they must continue to comply with state and federal requirements regardless of their participation in the ERP. Rhode Island's auto body ERP is unusual in the extent to which it addresses occupational health concerns and builds on research conducted in partnership with outside stakeholders. The Rhode Island auto body self-certification form incorporates federal OSHA as well as EPA regulations. RI DEM sought out considerable stakeholder involvement as it developed its ERP, particularly from the local vocational school. The Department had six auto body shops on its ERP steering committee, and these shops helped "ground-truth" the ERP workbook and other materials before they were finalized.

Rhode Island's ERP began in 2003, after more than two years of research and stakeholder meetings. RI DEM completed its second round of post-certification random inspections in early 2009.

Factors That Motivated Rhode Island To Develop Its Program

RI DEM developed its ERP as an alternative to a traditional permitting and inspection program. ERP was viewed as less resource intensive than a traditional program in both the initial program development and ongoing maintenance stages. In terms of program development, RI DEM anticipated that the process of developing ERP compliance assistance materials and conducting statistically based inspections would be easier than developing permitting requirements and associated regulations. Moreover, during program implementation, the Department expected that reviewing self-certifications and conducting random inspections as part of ERP would take less time and effort than reviewing and issuing traditional individual permits. As of August 2009, the Department estimates that it has spent between $150,000 and $250,000 (including staff time) on its program. This includes less than $10,000 spent on direct costs of printing, postage, and workshops. In addition, the Department partnered with staff from the University of Rhode Island's Center for Pollution Prevention to assist with the design and implementation of the program. The University staff used some of their own EPA grant money (received for pollution prevention research) for their ERP support. The Department found that the ERP required more resources than maintaining the status quo of annually inspecting less than five percent of facilities statewide, but less than a comprehensive permitting program.[95] The ERP has been viewed as successful, and the program is still active.

In addition to resource considerations, RI DEM was attracted to the performance-measurement aspects of ERP. Traditional permitting and inspection programs typically do not allow states to measure compliance rates, since inspections tend to be targeted rather than random, and therefore it is not possible to make inferences about the percent of all regulated entities in the state that are in compliance with requirements. In contrast, ERP's statistically based random sampling before and after compliance assistance and self-certification allows states to develop baseline and follow-up compliance rates, both for individual requirements and specific sets of performance measures. This ability to measure compliance rates and track performance over time was particularly appealing to RI DEM.

Program Advantages and Disadvantages

RI DEM staff see ERP as an ideal approach for addressing the auto body sector because ERP is particularly suited to addressing the multi-media impacts of auto body shops. ERP is also well suited to encouraging shops to follow regulations and to procure and use specific types of equipment (such as enclosed spray gun cleaners).

[95] Conversation with Rich Enander, Rhode Island Department of Environmental Management, February 12, 2009.

The Department is a strong supporter of ERP's statistically based inspection process. RI DEM staff see the performance measurement component of ERP as a powerful tool that all programs should adopt. For example, if a state has thousands of small quantity generators of hazardous waste, and only has the resources to conduct a small number of inspections per year, RI DEM suggests conducting those inspections on a random basis, so that statistical measurement can be used to track progress for the whole sector.

Using statistically based measurement, RI DEM found the auto body sector's compliance rates with state air regulations were high, even before distribution of ERP compliance assistance materials and self-certification forms. All shops inspected during both baseline and follow up inspections were in compliance with two air pollution indicators (low VOC compliant surface coating and HVLP spray guns). In general, shops were taking measures to minimize their paint usage because it was in their economic interest to do so. Likewise, RI DEM found that most shops use spray booths, because doing so allows a better paint finish for customers. However, ERP has been associated with some significant reductions in air emissions beyond those baseline conditions. In particular, RI DEM found that prior to ERP, 33 percent of shops were using MeCl, while only five percent were using MeCl after the first round of ERP.

HYBRID APPROACHES

SOUTH CAROLINA'S AUTO BODY HYBRID APPROACH[96]

Program Characteristics and History

South Carolina is among the most recent states to begin developing an ERP. South Carolina's Department of Health & Environmental Control (DHEC) is developing its ERP to specifically correspond with characteristics of the federal Paint Stripping and Miscellaneous Surface Coating Area Source Rule, which applies to auto body shops (along with other types of facilities). DHEC will select its universe of facilities so that it encompasses auto body shops covered by the area source rule. South Carolina's ERP will address the requirements of the area source rule, as well as encourage pollution prevention and measure quantitative environmental outcomes. DHEC will schedule development of the ERP so that it is consistent with the compliance dates in the rule.

DHEC plans to make participation in its ERP mandatory. The registration permit will be composed of the following items:

- Self-certification checklist, to be filled out by auto body shops;
- Self-certification statement, to be signed by auto body shop owners/operators;
- Return to compliance plans, if the self-certification process reveals instances of non-compliance; and
- A supplementary document that describes any other permit requirements.

By filling out the self-certification checklist, facilities will simultaneously demonstrate whether or not they are complying with the state registration permit and the federal area source rule. This streamlined process is intended to make it easy for auto body shops and inspectors to determine the shops' compliance status.

[96] Findings are based on a phone interview with Henry Porter, Manager of the Air Toxics Emissions Inventory and Modeling Division in the Bureau of Air Quality at the South Carolina Department of Health & Environmental Control, May 16, 2008.

Enforcement will not be a primary emphasis of the program. DHEC will likely only take action if a facility does not fulfill its return to compliance plan, and/or if state regulators come to the conclusion that a facility is not taking steps to meet the requirements of the area source rule. DHEC will give auto body shops several chances to understand their requirements and come into compliance with those requirements before taking enforcement actions.

DHEC is able to incorporate a registration permit into its ERP due to recent permitting regulations that enable several innovative types of general permits, including registration permits, which are a very streamlined type of general permit. To establish a registration permit the Department needs to create a stakeholder group, identify the requirements for facilities covered under the registration permit, and prepare a public notice.

The auto body shops won't "apply" for the registration permits in the same way that a facility would "apply" for a construction permit. Instead, they will submit a request to be included in the registration permit. Those requests can be received at any time and the state will keep a database of the requests. In January 2011 (the compliance date for existing shops under the federal area source rule), DHEC will issue the registration permits for all the existing auto body shops that have requested inclusion in the registration permit process. The registration permit will include a self-certification package (i.e., a self-assessment checklist, annual self-certification form, and return-to-compliance plan form). In subsequent years, DHEC anticipates sending the self-certification forms out with the fee alert letters. Each year, the facilities will submit the self-certification, and any applicable return-to-compliance plans, back to DHEC. In addition to the self-certification package that will serve as the registration permit, South Carolina's ERP will include standard program elements including compliance assistance workshops and workbooks, and statistically based baseline and follow-up inspections. DHEC intends to use ERP's performance measurement tools to demonstrate to EPA its progress in achieving compliance with the area source rule. Because of the focus on the area source rule, the ERP will focus primarily on air emissions, and will not cover multiple environmental media, as is common in other ERPs.

As of September 2009, due to budget constraints, the ERP is on hold. However, the state has decided to continue the registration permit component of its program. The permit will be released by the time the area source rule comes into effect in January 2011. In addition, the state is continuing to develop its workbook to go along with the permit, so that when resources allow, the full ERP can be rolled out as planned.[97]

Factors that Motivated South Carolina to Develop its Program

Given resource constraints, the state felt that it could not use a traditional permitting program for regulating the auto body sector. DHEC anticipates that there are nearly 1,000 auto body shops in South Carolina. If DHEC used a traditional compliance approach for those shops, the Department would typically inspect those facilities once every three years, which would likely exceed DHEC's available resources. Moreover, since new area source rules are also anticipated for other sectors, DHEC felt it had to find a more efficient method to regulate area sources. The Department settled on ERP as an efficient way to implement the area source rule for auto body shops and measure their compliance.

Before developing the ERP, DHEC's Bureau of Air Quality placed little emphasis on the auto body repair sector. The state does have general rules for VOC emissions that apply to auto body shops, but the Bureau of Air Quality had not set specific requirements for shops in this sector. In the past, DHEC's

[97] Conversation with Henry Porter, the Director of Emissions, Evaluation, and Support Division, South Carolina Bureau of Air Quality, September 24, 2009.

Bureau of Air Quality only required auto body shops to get a permit if they were the subject of complaints. In those cases, permit requirements were very basic, and did not require specific controls. DHEC's hazardous waste program has conducted some outreach to the mechanical auto repair sector, and it is likely that some auto body shops are aware of those outreach efforts.

Program Advantages and Disadvantages

It is early to assess the strengths and weaknesses of applying ERP to the auto body sector in South Carolina because the program is still under development. However, DHEC is not anticipating any problems with using ERP to implement the area source rule, other than the cost of full program implementation.

The South Carolina Bureau of Air Quality has been considering how to implement parts of the Paint Stripping and Miscellaneous Surface Coating rule that applies to facilities other than auto body shops. The Bureau is moving forward with a registration permit. The Bureau is continuing to develop a compliance assistance workbook and self-certification form for these non-auto body facilities subject to the rule; distribution will depend on the availability of resources.
DHEC is considering expanding the ERP for auto body shops to multiple environmental media, once the state successfully completes its first ERP cycle. For example, DHEC might expand the auto body ERP to encompass hazardous waste requirements.

MASSACHUSETTS' BOILERS HYBRID APPROACH[98]

Program Characteristics and History

Massachusetts Department of Environmental Protection (MA DEP) developed its ERP-like boilers certification program in September of 2001. This program replaced a site-specific permitting program, known as the limited plan application process. Under the limited plan application, smaller commercial and industrial boilers would need to have a permitting engineer complete a plan application and demonstrate that the facility met requirements for initial construction, emission limits, stack requirements, and record keeping. Facilities also paid a fee. MA DEP then reviewed applications and made case-by-case permitting decisions.

MA DEP found that for boilers, the limited plan applications were quite similar across facilities, and therefore it decided to use a self-certification approach, based on the ERP model.[99] New facilities (installed after September 14, 2001) with a heat input rating between 10 and 40 MMBTU/hr are required to:

- Burn clean fuels,
- Properly maintain equipment (including an annual tune-up),
- Keep accurate records that show that the boiler will meet emissions limits if operated properly; and

[98] Findings are based on an interview with Paul Reilly, who runs the boilers ERP within the Massachusetts Department of Environmental Protection, September, 2008 and September 18, 2009.

[99] Note: although Massachusetts considers the boilers program an ERP, we call it an "ERP-like" self-certification program, to distinguish it from full ERPs that include statistically-based performance measurement before and after self-certification.

- Submit a compliance certification, which includes: facility information, facility emissions, boiler information, compliance information, and a certification statement.[100,101]

In cases where there are questions about whether a boiler will meet the requirements, facilities can run a screening model that estimates emissions to show that the boiler will not exceed National Ambient Air Quality Standards. If a facility is out of compliance in any area, it must submit a return-to-compliance plan. MA DEP developed a plain-English workbook to assist facilities in understanding these requirements, and it makes this workbook available with the self-certification forms.

Facilities are required to certify their compliance only once (not on an annual basis), and there are no fees associated with the certification. Compliance with the requirements of the boiler self-certification program does not relieve the facility of the responsibility of complying with other regulations. There are three exemptions to certification: (1) new wood fuel boilers, (2) facilities subject to the air operating permit program under 310 CMR 7.00 Appendix C, and (3) temporary boilers.

In developing its program for boilers, the MA DEP has not focused on the statistical evaluation component of a typical ERP. The Department has not conducted randomly selected pre- or post-certification inspections to measure changes in performance. In fact, there are no inspectors dedicated specifically to area source boilers. If a facility is inspected under another program, then the boiler certification form would be in the file for the inspectors to review.

The self-certification program also differs from typical ERPs in that it focuses on only one part of the facility (boilers), and not the facilities' entire operations. Thus the program has a much more narrowly defined focus than a full ERP.

Factors that Motivated Massachusetts to Develop its Program

The limited plan application process for boilers required a significant amount of resources from the perspective of both MA DEP and regulated facilities. Since limited plan applications were largely similar, it seemed inefficient for permit engineers to write almost boilerplate permit language for many different facilities. MA DEP decided that rather than requiring that all of these facilities obtain individual permits, an ERP-like program could suffice, where the self-certification form would take the place of a site-specific permit.

MA DEP designed the thresholds for its ERP-like self-certification program to mirror that of the limited plan application (the program covers boilers between 10 and 40 MMBUT/hr). Boilers below the 10 MMBTU/hr threshold are exempt from permitting (as long as the boiler does not trigger certain requirements, e.g., by burning residual oil). Boilers above the 40 MMBUT/hr threshold are required to obtain a more comprehensive permit.

MA DEP did consider a permit-by-rule alternative instead of requiring site-specific permits or self-certification. The permit-by-rule would have set forth certain requirements for boilers, and if operators met those requirements they would have been considered in compliance and would not have had to submit any information to the state. However, MA DEP felt that a permit-by-rule would not have required sufficient information from facilities; they wanted more assurance that the facilities are aware of their requirements and that they can be held accountable for meeting those standards.

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[100] Massachusetts Department of Environmental Protection, "Boiler Environmental Certification Workbook".

[101] Massachusetts Department of Environmental Protection, Environmental Results Program. "Compliance Certification Instructions for Boilers."

Program Advantages and Disadvantages

One key advantage of this ERP-like program is that facilities must submit a signed certification form that makes the facility aware of its requirements, while holding it legally responsible for accurate certification. The program is designed so that most facilities can complete the certification on their own (i.e., without a consultant), significantly reducing the resources necessary to demonstrate compliance. There is no permitting fee, and the self-certification forms and accompanying workbook are meant to make requirements easily understandable to facilities with a wide range of environmental expertise.

The ERP-like program also reduces the amount of time spent from MA DEP's perspective, as they do not have to individually review permit applications for each facility, or conduct a back-and-forth dialog with the facility as part of the permit development process. This represents a considerable time savings for MA DEP. Less than one FTE is needed to run the program on an ongoing basis, although developing the program initially did take more resources. MA DEP does not have an estimate of the amount of time spent during program development.

The ERP-like program has forced technological improvements in the boilers sector. For example, emissions limits in the self-certification form have essentially required facilities to begin using burners with low NO_X emissions. The program has also encouraged facilities to voluntarily prevent pollution. For example, under the self-certification program, if facilities have an automated combustion control system, they are exempt from the annual tune-up requirement. This is designed to create an incentive for facilities to use add-on equipment that will make their operations more efficient. MA DEP believes a significant percentage of boiler facilities have installed automated combustion control systems.

Initially, the program allowed facilities to self-certify compliance up to 60 days after construction or start-up of operations. This was designed to allow facilities more flexibility. However, in some cases the self-certification process revealed that a facility was not meeting state requirements, so the facility had to go back and install retrofits with low NO_X boilers. In December of 2007, Massachusetts amended the rule to require certification before construction and/or installation to resolve this issue.

One challenge of the MA DEP program is that it is not flexible for facilities that do not meet the self-certification requirements. There is no "opt-out" option for facilities that want to use a type of fuel not covered under the ERP-like program. For example, all boilers must burn natural gas if available; or otherwise distillate fuel oil. Facilities do not have an option to burn plain number 2 oil under the ERP-like program, nor do they have the option to apply for a site-specific permit if they do want to burn this fuel. However, beginning in July 2009, MA DEP introduced more flexibility for fuel choice: facilities will have the option to burn natural gas and/or ultra low sulfur distillate fuel in any combination they like. This should help facilities reduce fuel costs, because they can negotiate a better price on natural gas if they are willing to switch to fuel oil for a few months during the year when gas is at peak demand. MA DEP is especially sensitive to trying to help facilities lower their fuel costs, given the current economic climate.

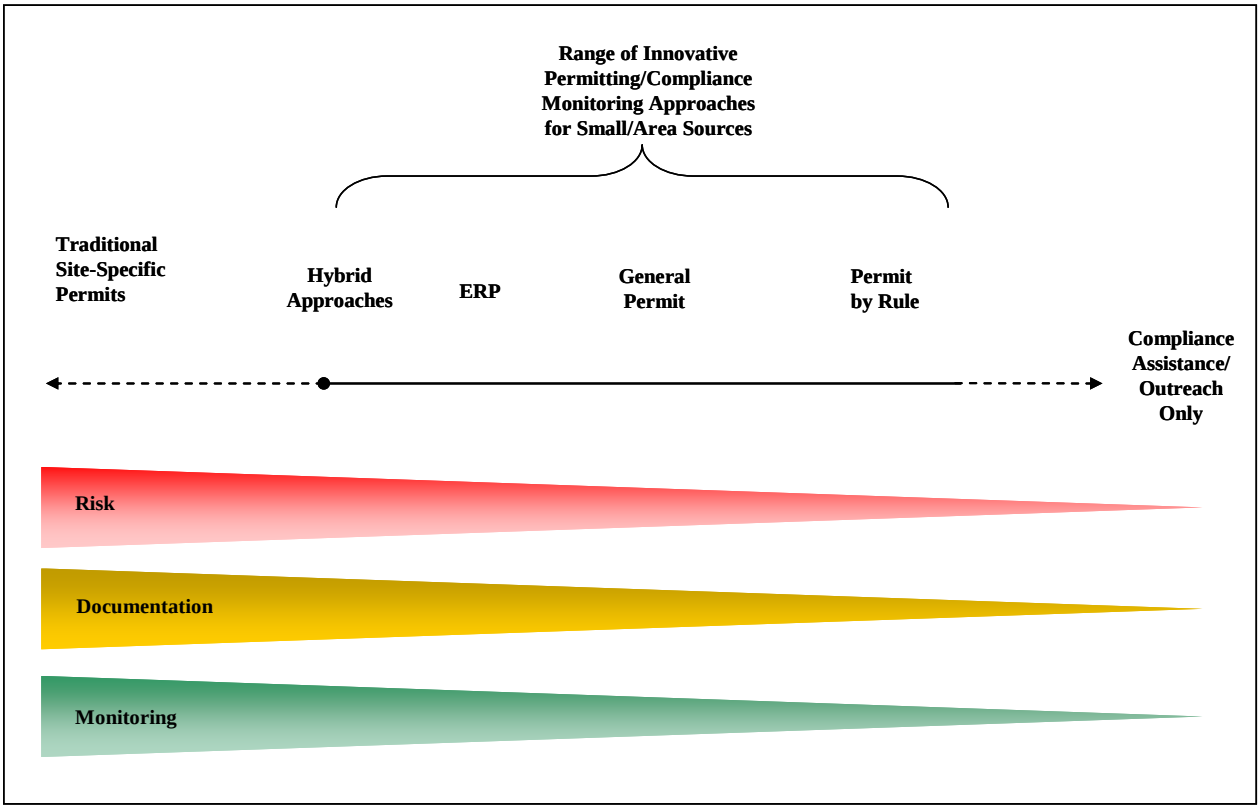
CHAPTER 4 | CONCLUSIONS

This chapter summarizes the findings from our research, and seeks to answer the key questions outlined earlier in this guide. The chapter also considers how the innovative approaches described in this guide may be used in combination to address area sources, as well as implications for regulators in considering how to select policy tools to implement area source rules.

SUMMARY OF POLICY TOOLS USED BY STATES

This guide focuses on four broad permitting/compliance monitoring approaches for implementing area source rules: general permits, permits-by-rule, ERP, and hybrid approaches that combine elements of the other three approaches. These permitting/compliance monitoring approaches are most suitable for facilities that represent a moderate level of risk: not so much that a traditional site-specific permit would be required, but enough risk that a state wants to go beyond simply providing compliance assistance. The level of environmental risk posed by the facility corresponds to the level of documentation required from facilities, and the level of oversight provided by the state. In other words, facilities that present the most risk require relatively more documentation, and relatively greater compliance monitoring to ensure that facilities do not exceed emissions limits and follow required management practices. Within the set of tools examined in this paper, permits-by-rule require the least documentation and provide for minimal oversight, and therefore are best suited to the least-risk facilities. General permits and ERP require progressively more documentation, and ERP incorporates a measurement component which allows for statistically based compliance monitoring. Hybrid approaches that combine ERP and a general permit or permit-by-rule require the greatest amount of information from facilities, and seem most likely to help facilities achieve compliance while at the same time helping states measure the extent to which facilities are in compliance. With diminishing risk, less documentation and monitoring are required. Exhibit 4-1 demonstrates the spectrum of policy approaches available, relative to the following considerations: risk, documentation, and monitoring.

EXHIBIT 4-1: SPECTRUM OF PERMITTING/COMPLIANCE MONITORING APPROACHES[102]



Given this spectrum of permitting/compliance monitoring approaches, states considering how to regulate the auto body or boilers sectors may find it most helpful to consider selecting combinations of specific policy tools to achieve certain regulatory functions or policy goals. Through the course of this research, we have identified eight key functions that state agencies may try to achieve through their programs:

- Alert facilities to program requirements;
- Offer compliance assistance;
- Obtain documentation of facility compliance;
- For facilities out of compliance, obtain documentation of facility plans to achieve compliance;
- Enable onsite inspectors to determine whether facility is in compliance;
- Measure changes in performance;
- Reassess facility performance and update requirements, through renewal; and
- Conduct targeted assessments and enforcement (e.g., based on inspectors or citizen complaints).

[102] The degree of difference between general permits and permits-by-rule on this spectrum will vary by the specific design of the permit.

Exhibit 4-2 describes a variety of policy tools used to achieve these functions, and shows which tools different states have used in combination to achieve their goals.

EXHIBIT 4-2: PROGRAMS USING VARIOUS POLICY TOOLS

POLICY FUNCTION - POLICY TOOLS TO ACHIEVE THAT FUNCTION	SPECIFIC STATE PROGRAMS USING VARIOUS POLICY TOOLS					
	AZ BOILER GEN. PERMIT	TX AUTO BODY PERMIT-BY-RULE	TX BOILER PERMIT -BY-RULE	RI AUTO BODY ERP	SC AUTO BODY ERP-HYBRID	MA BOILER ERP-HYBRID
Alert facilities to program requirements						
Requirements written into the permit	✓	✓	✓		✓*	✓*
Self-certification forms	✓			✓	✓	✓
Offer compliance assistance						
Compliance assistance workbooks				✓	✓	✓
Outreach	✓	✓	✓	✓	✓	✓
Obtain documentation of facility compliance						
Permit application/ registration	✓	✓			✓*	✓*
Self-certification forms	✓			✓	✓	✓
Emissions inventories	✓	✓				
Obtain documentation of facility plans to achieve compliance						
Return to Compliance Plans				✓	✓	✓
Enable on-site inspectors to determine whether facility is in compliance						
Requirement to maintain records on site	✓	✓	✓	✓	✓	✓
Measure changes in performance						
Statistically based inspections before and after program implementation				✓	✓	
Renewal						
Further rounds of outreach and self-certification forms				✓		
Targeted Inspections/Enforcement						
Targeted inspections as needed	✓	✓	✓	✓	✓	✓
* For South Carolina and Massachusetts, the self-certification form, with accompanying documentation, serves as a permit.						

In addition to these functions, all of the permitting/compliance monitoring approaches reviewed (general permits, permits-by-rule, ERP, and hybrid approaches) allow states to encourage development and use of new technologies to reduce emissions and update requirements to reflect such new technologies. These functions are achieved by setting the standards or requirements for regulated entities; the more stringent the requirements, the more facilities, and manufacturers that supply them, will be forced to adopt or develop newer, more efficient technologies. In addition, all of the permitting/compliance monitoring approaches reviewed have the potential to encourage pollution prevention by sharing information with facilities about how this can be cost effective. In some cases, states have also developed incentives for facilities to adopt pollution prevention (e.g., by imposing fewer permit requirements for facilities that can demonstrate they have adopted specific pollution prevention practices).

MOTIVATIONS FOR SELECTING PERMITTING/COMPLIANCE MONITORING APPROACHES

A key question this study sought to answer was *why* states have selected the approaches they are using to address the auto body and boilers sectors. It is stating the obvious to say that states selected the permitting/compliance monitoring approaches they did because they felt it was the best option to achieve their goals at the lowest cost to the agency and the regulated community. However, it is important to note that states considered different sets of alternative policy approaches as potential options when they made their decisions, and these alternatives were informed by agency history and experience. Most states interviewed contrasted the permitting/compliance monitoring approach they selected with individual, site-specific permits, and decided that case-by-case permitting would be too resource intensive and unworkable for sectors such as auto body shops and boilers. On the other hand, most states interviewed did not recall deciding between the full range of permitting/compliance monitoring approaches discussed in this paper. For example, in Rhode Island and South Carolina, the choice was between site-specific permits and ERP, while in Arizona the choice was between site-specific permits and general permits. In Texas, given the state's long history and experience with permits-by-rule, this seemed an obvious choice for the two sectors in question, although the state did consider developing a permitting program for manufacturers as an alternative to regulating auto body shops and boiler facilities themselves. Massachusetts did consider ERP and permits-by-rule as two alternative approaches to regulate boiler facilities, and in fact by designing an "ERP-like" self-certification program, the Massachusetts approach is arguably a hybrid between a full ERP and a permit-by-rule.

It is also important to note that states placed different priorities on the various policy functions they were seeking to achieve, and therefore they selected different suites of policy tools to meet their goals. For example, in Rhode Island, being able to track changes in sector performance was an important goal for the auto body sector, but this was not a high-priority concern for Texas in regulating either the auto body or the boilers sectors. In another example, Texas felt that it would be an inefficient use of resources to require registration and track emissions from boilers, while Arizona and Massachusetts both require boilers facilities to submit information about their operations to the state.

The varying priorities states place on different policy functions is surely informed by the varying levels of resources that state agencies have available, the number of entities they must regulate, the perceived risk of environmental and health impacts from regulated entities, and the geographic span of their territory. For example, there are fewer than 400 auto body shops in Rhode Island, compared to about 5,000 shops in Texas. Some policy tools may take more resources to apply on a large scale; for example, it would probably require an automated system to review permit applications/registrations or self-certification forms for 5,000 facilities, and therefore a state like Texas would likely only make that investment if it viewed the auto body sector as an important source of environmental or health risks for its population. On the other hand, some policy tools are designed to be cost-effective at large scales. For example, to develop a statistically valid baseline measurement of sector performance with a confidence level of 90

percent and a margin of error of 10 percent, a state with 400 shops would need to inspect a random sample of 57 shops. A state with a population of 5,000 shops would need to inspect only slightly more shops (66 shops) to measure baseline performance with the same confidence level and margin of error.[103] Thus, for states interested in performance measurement, it may be worth considering statistically based sampling, with any of the implementation approaches discussed here, especially if they have very large populations of facilities in target sectors.

SUMMARY OF ADVANTAGES AND DISADVANTAGES OF EACH PERMITTING/COMPLIANCE MONITORING APPROACH

Overall, each state interviewed as part of this study seemed satisfied that the permitting/compliance monitoring approach they selected was working well for the target sector and meeting the agency's goals. States pointed out a number of advantages, as well as some disadvantages to the permitting/compliance monitoring approaches they selected. Exhibit 4-3 summarizes these findings.

EXHIBIT 4-3. ADVANTAGES AND DISADVANTAGES OF VARIOUS PERMITTING/COMPLIANCE MONITORING APPROACHES

PERMITTING/ COMPLIANCE MONITORING APPROACH	ADVANTAGES	DISADVANTAGES
General Permits	▪ State develops one permit for all facilities; this is cost effective for regulators and facilities, compared to site specific permits or ERP. ▪ Facilities can add new sources to their general permit relatively easily, compared to site-specific permits.	▪ To operate efficiently, general permits must allow less flexibility for regulated facilities (compared to site-specific permits). If a facility is operating equipment not covered under a general permit, it must apply for an individual permit. Likewise, if the state finds that an ineligible piece of equipment is common to many or all of the facilities in an industry, the state will need to modify the general permit.
Permits-by-Rule	▪ Minimal burden on state agencies and regulated facilities. ▪ Facilities can construct new sources more quickly because they typically do not need to wait for an authorization to construct. ▪ Depending on how the permit-by-rule is written, it can be relatively easy to update a permit-by-rule as newer equipment becomes available.	▪ If notification is not included in the permit-by-rule, facilities may not be aware of their requirements, and the state would have no way of knowing which facilities are subject to the Rule. ▪ As renewals are generally not required for facilities already permitted, older facilities may be operating with non-compliant technology. ▪ Measuring changes in performance is very difficult, particularly if notification is not required.

[103] ERP Sample Planner, available online at http://www.epa.gov/erp/roadmap/resources/erp_sampleplanner_nodate.xls. (Last viewed October 1, 2008).

PERMITTING/ COMPLIANCE MONITORING APPROACH	ADVANTAGES	DISADVANTAGES
Environmental Results Program	▪ Well suited to deal with multi-media issues. ▪ Simplify process for small entities by consolidating materials and information. ▪ Statistically based inspection process quantifies changes in performance for the whole sector. ▪ Compliance assistance workbook is well suited to assist facilities to understand compliance requirements and encourage facilities to go beyond the regulatory requirements through pollution prevention practices. ▪ In some cases, it may be easier for an agency to develop an ERP than to establish permitting requirements. In the case of area source rules, ERPs will have to be mandatory, which may not be easier to develop.	▪ ERP seems to require relatively more staff time and resources to implement (at least compared to permits-by-rule), although fewer resources are required compared to traditional site-specific permits. ▪ Materials developed for a specific sector do not transfer to another sector. On the other hand, materials from other states that have developed ERPs for the same sector may be adapted.
Hybrid Approaches	▪ Advantages depend on the tools combined. For example, combining ERP with a general permit may offer the benefits of compliance monitoring, with the requirement that a facility submit a self-certification form, which serves the function of a permit.	▪ Disadvantages depend on the tools combined. For example, an ERP-like approach without a statistically based measurement component could offer cost savings, but would not provide a strong compliance-monitoring function.

RECOMMENDED CONSIDERATIONS FOR SELECTING PERMITTING/COMPLIANCE MONITORING APPROACHES AND POLICY TOOLS

States that are considering developing a program to address auto body shops or boilers clearly have a choice between several permitting/compliance monitoring approaches, and a range of specific policy tools to meet their goals. An important first step in selecting an approach or policy tool is to understand the agency's goal(s) for the program. For example, is the agency seeking to achieve measureable behavior changes in the sector, ensure that all facilities have a permit because it is required by state law, and/or implement federal requirements (such as those included in the area source rules)? Whatever the agency's goals, they should be clearly defined and articulated among agency staff. As part of the discussion of goals, the agency should consider the relative priority it places on various policy functions, such as those discussed earlier.[104]

[104] These policy functions include alerting facilities to program requirements; offering compliance assistance; obtaining documentation of facility compliance; obtaining documentation of facility plans to achieve compliance for facilities out of compliance; enabling onsite inspectors to determine whether facility is in compliance; measuring changes in performance; renewing the program; and conducting targeted inspections/enforcement.

Next, the agency should identify a range of possible permitting/compliance monitoring approaches and policy tools, such as those described in this guide, that the agency could implement. Given the state's statutory framework, regulations, and history, states may have different sets of policy tools that they can use to achieve their goals. For example, some states have a regulatory framework in place for general permits or permits-by-rule, while in other states such permitting mechanisms may not be readily available. Keep in mind that permitting/compliance monitoring approaches could focus on setting standards for manufacturers or equipment suppliers, in lieu of regulating individual facilities, in cases where specific types of equipment that lead to emissions of concern are well defined and standard across the sector.

Finally, the agency should consider a range of factors that could influence its choice of policy tools. We suggest several such factors below.

Level of Environmental Protection

Ideally, the level of risk that a facility poses would match the attention that facility receives from the regulator and the facility. Each of the three programs described in this guide seek to reduce the environmental risk posed by area source facilities. However, the level of attention given to individual facilities varies with each program. Permits-by-rule require the least amount of commitment and contribution from facilities, and therefore provide little assurance that facilities are in compliance. ERP, on the other hand, requires a relatively high level of participation and commitment from facilities, and provides quantitative measures of sector performance. For those sectors that present a relatively higher environmental risk, ERP or ERP *plus* a general permit or permit-by-rule may be a better choice, since a more hands-off approach such as a permit-by-rule may not ensure compliance.

Number of Facilities

Both the auto body and boilers sectors have a relatively large number of facilities, but the number of facilities in any given state varies. As noted earlier, certain policy tools are well suited to efficiently address a large number of facilities, while other policy tools require more resources to address a larger number of facilities. For example, statistically based inspections can be used cost effectively in sectors with a large number of businesses, and permits-by-rule can likewise be easily implemented in sectors with many facilities. On the other hand, any policy tool that requires the state agency to review submissions from facilities (e.g., permit applications, emissions inventories, or self-certification forms) will be more difficult to implement in sectors with a large number of facilities. States will either need to dedicate staff to reviewing facility submissions, or develop automated systems to scan facility materials and highlight facilities that need individual attention by agency staff.

Similarity of Operations

Although area source rules generally address sectors with similar operations, there are gradations in the degree of similarity of operations within a given sector. For example, facilities with small industrial/commercial/institutional boilers have very similar boiler equipment and operations. On the other hand, in the auto body sector, facilities can vary from highly automated, professional shops, to backyard operations. Where states anticipate a range of different equipment or operations in a sector, they will need to be able to carefully define these different categories of facilities and explain the requirements that apply to each. Among the permitting/compliance monitoring approaches discussed here, permits-by-rule are probably the least suited to allow flexibility for different types of equipment because they provide for the least amount of information submitted by the facility, and therefore it would be difficult for regulators to determine whether facilities had understood the specific requirements that applied to their type of operations.

Size of Facility Operations

The relative amount of resources available to a facility can influence the degree to which it can participate in various program options. For example, if a facility has more time and money to spend on compliance efforts, they are more likely to be able to participate in programs that require them to review materials and submit information to a state agency. On the other hand, if a facility is much smaller, and has little or no staff time to spare, it may be harder to get that facility to participate in a more strenuous compliance effort. In addition, larger facilities may be more likely to already employ industry standard equipment, or equipment that meets the regulatory requirement. Permits-by-rule require the least amount of resources from the facility, as they are in some cases not required to submit any paperwork at all. General permits and ERPs require a little more effort, as the facility must submit a permit application and/or self-certification form, with accompanying materials.

Knowledge and Expertise on Site

Similar to the consideration of the size of the operations of facilities in the target sector, the regulator should also consider the knowledge and expertise of the staff on site at the facilities. For example, ERPs are designed to educate facilities about their compliance requirements, and help them understand what they need to do to comply. On the other hand, general permits and permits-by-rule may provide little support for facilities to understand their compliance requirements, and may need to be supplemented by additional outreach and compliance assistance if facilities in the sector do not have the needed environmental expertise.

Agency Resources

The regulator should also consider the resources that it has to expend on the regulatory effort. Just as the three approaches require different levels of resources from facilities, they also require different levels of resources from the regulator. During program development, all three approaches may require significant effort; although at least one state agency (RI DEM) felt that developing an ERP would be easier than developing permitting requirements. However, once program implementation has begun, permits-by-rule generally seem to require the least resources and staff time, while ERPs and general permits require more attention and staff time to implement, depending on the specific requirements of the program. For example, ERPs generally include statistically based pre- and post-certification inspections (although these inspections can be done as a component of any of the policy approaches), which requires resources of inspectors or other individuals who are trained to review facility operations on site.

Economies of scale

This document provides guidance to regulators for selecting an implementation approach for the auto body and boilers area source rules. However, since October 16, 2009, the EPA has promulgated a total of 62 area source rules, and will eventually promulgate the remaining eight area source rules. While it is likely not appropriate for regulators to choose a single approach for all area source rules, there may be economies of scale if a state commits to investing in a certain permitting/compliance monitoring approach for a number of area source rules. For example, if a regulator chooses the ERP approach for all of the area source rules, the regulator will gain valuable institutional knowledge and infrastructure (e.g., reporting systems) about ERPs that can be applied to multiple area source rules. However, certain program materials will need to be developed for each new area source (e.g., self-certification checklist and compliance assistance workbook).

APPENDIX A:

PROMULGATED AND PROPOSED AREA SOURCE RULES[105,106]

Group One Rules[107]	Number of Sources	Final Rule Dates
Glass Manufacturing	21	12/26/07 (72FR73180)
Stainless and Non-stainless Steel Manufacturing EAF[108]	93	12/28/07 (72FR74088)
Iron and Steel Foundries	427	01/02/08 (72FR225)

Group Two Rules	Number of Sources	Final Rule Dates
Paint Stripping and Miscellaneous Surface Coating Operations (includes Paint Stripping, Plastic Parts and Products (Surface Coatings), and Autobody Refinishing	Thousands	01/09/08 (73FR1738)
Reciprocating internal combustion engines – NEW engines (note the FR notice includes NSPS)	Thousands	01/18/08 (73FR3567)
Gas Distribution Bulk Terminals, Bulk Plants, and Pipeline Facilities; and Gasoline Dispensing Facilities	14,000	01/10/08 (73FR1916)
Oil and Natural Gas Production Facilities	2200	01/03/07 (72FR26)

[105] Personal communication, Sharon Nizich, U.S. EPA, January 6, 2009.

[106] U.S. EPA, Technology Transfer Network, Air Toxics Web Site. "Area Source Standards." http://www.epa.gov/ttn/atw/area/arearules.html. (Last viewed October 9, 2009).

[107] These groupings are based on an Office of Air Quality Planning and Standards guidance which prioritizes the area source rules into three groupings based on the rule's potential for emission reductions. "Area Source Program Implementation Priorities Assistance Document for Regional Air Division Directors", July 2008.

[108] Original final rule was dated December 28, 2007 (72FR74088). Amendments issued in a direct final rule on December 1, 2008. Direct final rule was withdrawn on February 26, 2009.

Group Three Rules	Number of Sources	Final Rule Dates
Primary Nonferrous Metal Production	3	01/23/07 (72FR2930)
Primary Copper Smelting	3	01/23/07 (72FR2930)
Secondary Copper Smelting	0	01/23/07 (72FR2930)
Polyvinyl Chloride and Copolymers Production	2	01/23/07 (72FR2930)
Carbon Black Production	0	07/16/07 (72FR38864) Amended 3/26/08 (73FR15923)
Acrylic Fibers/Modacrylic Fibers Production	1	07/16/07 (72FR38864) Amended 3/26/08 (73FR15923)
Wood Preserving	393	07/16/07 (72FR38864) Amended 3/26/08 (73FR15923)
Chemical Manufacturing: Chromium Compounds	2	07/16/07 (72FR38864) Amended 3/26/08 (73FR15923)
Flexible Polyurethane Foam Production and Fabrication	300	07/16/07 (72FR38864) Amended 3/26/08 (73FR15923)
Lead Acid Battery Manufacturing	60	07/16/07 (72FR38864) Amended 3/26/08 (73FR15923)
Clay Ceramics Manufacturing	51	12/26/07 (72FR73180)
Secondary Nonferrous Metals	10	12/26/07 (72FR73179)
Hospital Ethylene Oxide Sterilizers	Thousands	12/28/07 (72FR73611)
Plating and Polishing	2900	07/01/08 (73FR37728)
Nine Metal Fabrication Categories: Fabricated Plate Work (Boiler Shops), Heating Equipment, Except Electric, Electrical and Electronic Equipment - Finishing Op., Fabricated Metal Products, not elsewhere classified, Fabricated Structural Metal Manufacturing, Industrial Machinery and Equipment - Finishing Operations, Iron and Steel Forging, Valves and Pipe Fittings, Primary Metal Products Mfg	5800	07/23/08 (73FR42978)

Final Rules	Number of Sources	Final Rule Dates
Aluminum Foundries	542	06/25/09 (74 FR 30366)
Copper Foundries	281	06/25/09 (74 FR 30366)
Nonferrous Foundaries	143	06/25/09 (74 FR 30366)
Ferroalloys Production Facilities	Not available	12/23/08 (73 FR 78637)

Proposed Categories	Number of Sources	Date and FR Citation (of Proposed Rule)
Chemical Preparations	26	08/05/09 (74 FR 39013)
Prepared Feeds Manufacturing	1800	07/27/09 (74 FR 36980)
Asphalt Processing and Asphalt Roofing Manufacturing	28	07/09/09 (74 FR 32822)
Chemical Manufacturing	450	10/06/08 (73 FR 58351)
Paints and Allied Products Manufacturing	2190	06/01/09 (74 FR 26142)

Rules Promulgated on October 16, 2009
Agricultural Chemicals & Pesticide Manufacturing
Cyclic Crude & Intermediate Production
Industrial Inorganic Chemical Manufacturing
Industrial Organic Chemical Manufacturing
Inorganic Pigment Manufacturing
Misc. Organic Chemical Manufacturing
Pharmaceutical Production
Plastic Materials and Resins Manufacturing
Synthetic Rubber

Rules to be Promulgated by November 16, 2009 and December 16, 2009
Paint and Allied Products
Asphalt Processing and Asphalt Roofing Manufacturing
Chemical Preparation
Prepared Feeds

Rules to be Promulgated by December 16, 2010
Industrial Boilers
Institutional/Commercial Boilers
Sewage Sludge Incineration
Brick and Structural Clay

APPENDIX B:

SAMPLE INTERVIEW GUIDE

Note: This interview guide was developed for Texas. Specific questions were adapted for each state and program under review, although they followed the same general topics shown here.

Questions for Texas on its Permit by Rule program for auto body shops

1. I understand Texas uses Permits by Rule (PBRs) to encourage auto body shops to come into compliance with air emissions requirements. Is this correct?
2. Can you describe how the PBRs work (what do facilities do to apply, and what follow up actions does the state take)? Are there compliance assistance, inspections/monitoring, and/or compliance assurance/enforcement components to this approach?
3. How long has the PBR approach been in place?
4. How did Texas decide which sectors should be included in its PBR program?
5. Do state-specific requirements for air toxics apply to auto body shops, as distinct from federal requirements? If so, what is the nature/extent of the differences between the state and federal requirements?
6. Has Texas considered (or used) other approaches for addressing auto body shops? If so, what other approaches were considered (or used)? Why was the current approach chosen?
7. What environmental and compliance results have been realized as a result of using PBRs for auto body shops? Does the state measure or assess these results, and if so, how? Does the state have access to baseline information (before PBRs were in place) for comparison purposes?
8. What has it cost to implement the PBR approach (for startup and on an ongoing annual basis)?
9. What are the advantages and disadvantages of PBRs in terms of:
    - Suitability given sector demographics (e.g., number of regulated entities, facility size and sophistication, degree to which entities in the sector share similar equipment and processes and are therefore subject to similar requirements, sector's compliance history)
    - Appropriateness given environmental and health risks posed by the sector
    - Likelihood of generating environmental results/compliance
    - Cost and cost-effectiveness for regulators and regulated entities
    - Ability to measure changes in environmental performance

Do you think PBRs are well suited to implementation of the federal area source rule for auto body shops? Please describe ways in which you think the area source rule is not compatible with PBRs.

10. Does the state currently have, or is it considering taking, delegation for the auto body area source rule? Please describe what factors would influence the state's considerations of whether or not to take delegation for the rule.
11. Do you think PBRs may be well suited to implementation of current or upcoming federal area source rules for other sectors that address small businesses? (These sectors include boilers, oil and natural gas production facilities, gas stations, and plating and polishing facilities.)